

# Research on Unlimited Love: First-Wave Findings and Future Directions

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Report to the Institute for Research on Unlimited Love

(Earlier version: May 20, 2013)

Revised 2<sup>nd</sup> version: May 29, 2013

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**Acknowledgements**

Some parts of this paper have been adapted from an earlier report (Oman, 2010a). We are grateful to Stephen Post and the Institute for Research on Unlimited Love for its support of this project, and to many of the principal investigators on sponsored projects who sent information about their work.

## **Executive Summary**

### **BACKGROUND:**

This report reviews the impacts of the first wave of studies of Unlimited Love (UL) that were funded by Institute for Research on Unlimited Love (IRUL), studies catalyzed by a 1999 conference at the Massachusetts Institute of Technology. We review findings and influence from a total of 32 projects generated by a request for proposals (RFP) released in 2002, as well as two smaller research initiatives on UL: a developmentally-focused initiative (cofunded with Fetzer), and an initiative focused on adolescents (supported by Judith B. Watson).

### **METHODS:**

Peer reviewed journal article publications were identified through principal investigator (PI) inquiries and several other processes to ensure a comprehensive and specific list of publications generated by the first wave of IRUL-funded projects. Other publications (e.g., chapters in edited books, authored books) were identified through similar processes. Peer reviewed journal articles were analyzed for 1) how UL was conceptualized and measured, 2) the number and type of study participants, major findings, 3) the role in the study of spirituality/religion, and 4) whether the article cited previous UL literature or used UL terminology. The 32 funded projects were sorted into 8 categories, and prose descriptions and tabular representations were constructed for major findings of each project. Temporal trends were assessed for citations of UL literature and UL terms. Topics for future investigation were identified for each study category, and for the overall UL field.

### **RESULTS – GENERAL:**

By June, 2012, nearly three-quarters (23/32) of funded projects had produced one or more peer-reviewed journal articles with a major or primary focus on a UL-related construct. A total of 45 peer-reviewed articles on UL-related constructs were identified, including 31 empirical studies and 8 reviews/theoretical articles. As anticipated when the projects were funded, the research reports varied greatly in how they operationalized UL. The UL-related constructs of interest varied widely, ranging from laboratory-based altruistic monetary gifts to maternal caring behaviors, performing volunteer work, and consoling behaviors by chimpanzees.

### **RESULTS – EMPIRICAL FINDINGS:**

Evidence, ranging from merely suggestive to strong and compelling, was found for a variety of theorized antecedents and consequences of compassionate love:

- Antecedents supported: social pressure for stable nutrition, social closeness, kinship, female gender, specific hormones, breastfeeding, vaginal delivery, mildly stressful experiences, receipt of UL as infant, secure attachment, mother's good communication, toddler self-awareness, specific brain region activation, experience of similar situation, religiousness, intrinsic religiousness, charismata (gifts of the spirit), positive religious coping, spiritual practices, spirituality, mother's civic engagement, friendship with minority, social support from multiple sources, usual adolescent development, education, social capital, schema connecting goals and actions, age, empathy, humility, gratitude, collective trauma, providing human services through congregations, specific interventions ("Fast Friend");

- Consequences supported empirically: oxytocin, brain response to infant cry, autonomic system response, conquering fear, less PTSD, improved well-being, higher marital quality, lower heart disease risk (female), more community volunteering, gratitude, and amazement; but also – for specific UL-related constructs – increased distress among children, shame, mistrust, lower charitable contributions, less hippocampal neurogenesis, and more externalizing.

**RESULTS – SCIENTIFIC AND OTHER IMPACTS:**

Important scientific accomplishments included demonstration of the viability and effectiveness of both laboratory-based and real-world interventions to increase UL; inclusion of a wide range of UL-related measures in a nationally representative survey; and documentation of measurable physiological effects from distant healing intention. Although no journal article publications used “unlimited love” as a technical or theoretical term, more than one third (15/39) cited core UL publications. CL has an important place in an emerging subfield of sociology, “public sociology,” which emphasizes direct public dialogue by sociologists.

**CONCLUSIONS AND FUTURE DIRECTIONS:**

Several major achievements have laid important foundations for field development. Publications resulting from this initiative have documented numerous correlates, stimulated an increasingly refined conceptual base, and demonstrated the viability and effectiveness of practical applications. Suggested priorities for future research include measurement development, further theoretical refinement, empirical study using diverse approaches, and continued efforts to increase terminological and conceptual coordination. Specific priorities and needs vary between UL sub-areas. Additional cross-cutting topics of interest include understanding the dynamics of UL in individuals who manifest high or exceptional levels of UL.

**Answers to Specific Questions**

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# Research on Unlimited Love: First-Wave Findings and Future Directions

A report to the Institute for Research on Unlimited Love

Doug Oman, PhD and Kristin Meyer, BS

## Introduction

“Sooner or later, all the people of the world will have to discover a way to live together in peace, and thereby transform this pending cosmic elegy into a creative psalm of brotherhood.... such a method is love.... unconditional love will have the final word in reality.... we are living in the creative turmoil of a genuine civilization struggling to be born.”

– Martin Luther King, Jr,  
1964 Nobel Prize Acceptance Speech (1991, pp. 225-226)

“In practically all the societies of our time the generation of love energy still remains in its unorganized ‘natural’ stage....The time has come for humanity not only to begin to understand the nature, forms, and how and why of love, but also to endeavor to design more efficient techniques of its production.”

– Pitirim Sorokin (1954/2002, p. 37)

“Love is not love which alters when it alteration finds... O no! it... bears it out even to the edge of doom”

– William Shakespeare, Sonnet 116

All major spiritual and religious traditions have emphasized the importance of unselfish, compassionate, “other-regarding” love, a love that “centers on the good of the other” (Post, 2002, p. 56; Underwood, 2002, p. 70). Indeed, all major traditions have revered exceptional individuals who exhibit intensely active other-oriented concern, such as Jesus or the Buddha, and have encouraged ordinary people to follow their examples. This other-centered love is the focus of an emerging scientific research field, where *unlimited love* and *compassionate love* have emerged as two preferred terms to designate key features of this phenomenon (Fehr, Sprecher & Underwood, 2008; Oman, 2011; Post, 2003b; Post, Underwood, Schloss & Hurlbut, 2002). Approximately a dozen years old as an organized field, research on other regarding love has gradually consolidated and shifted its emphases.

Other-regarding love exists in a variety of forms, both as an observable phenomenon in society, and as a philosophical and theological construct. Of key importance is the difference between the intense other-regarding love exhibited by religious founders and saints, and the more mundane manifestations of other-regarding love that are visible on a daily basis in families and communities worldwide. The intense love observable in many saints, called *agape* by the ancient Greeks, is reported to be unlimited in its extensity, that is, to be directed at “all others without exception” (Post, 2003b, p. vii). In its preeminent manifestations, such saintly love is also reported to be wholehearted, pure, and unwavering – not disrupted by the turmoil of daily living.

An emerging term for this phenomenon – commonly understood as rare, but reported for millennia within all major religious traditions – is *unlimited love* – a term that recent scholars have recommended as beneficially “free of a narrow association with any one faith tradition, and [a term that in comparison to *agape* can] appeal more broadly across cultures, languages, and academic disciplines” (Post, 2003b, p. 17).

A related emerging term, *compassionate love*, possesses an arguably complementary meaning: Compassionate love has been used as a term to designate the more “garden variety” manifestations of other-regarding love that are commonly observable in families and communities. Such love is sincere in its other-centeredness, but may be more fragile and less pure than unlimited love. Because it is so commonly selective in its targets, compassionate love often coincides with emotions and drives that are shared with other species, especially mammals (e.g., parental caregiving; conspecific affiliation). The notion of other-regard is central to both constructs, and thus other-regard might be viewed as the shared *substance* of unlimited and compassionate love. But because they emphasize somewhat different manifestations of other-regard – the exemplary versus the widely prevalent – the two terms appear to be evolving to serve somewhat different functions in scholarship and research.

To date, there have been few if any published attempts to clarify the relation between unlimited love and compassionate love. However, the two constructs clearly should not be regarded as dichotomously distinct. From the perspective of Pitirim Sorokin, an eminent mid-20<sup>th</sup> century Harvard sociologist, one might argue that these two represent overlapping and essentially nested regions in a multi-dimensional space. Decades after it was written, Sorokin’s (1954/2002) brilliant and voluminous mid-century treatise still offers a useful framework for conceptualizing compassionate and unlimited love as multidimensional phenomena. For Sorokin, as for the framers of the compassionate and unlimited love constructs, genuine love is other-centered in that “the loved person is experienced always as the end value” (p. 10). Building on this foundation, Sorokin went further, representing love as varying along five major dimensions that included intensity, purity, duration, adequacy,<sup>1</sup> and extensity (e.g., extended to all humanity, as in unlimited love, versus to a smaller group only).

What regions in Sorokin’s multidimensional space represent unlimited love and compassionate love? One might argue that each construct, in order to be meaningfully present in a human being, must exceed certain minimum thresholds of purity and intensity – or else these other-regarding phenomena could essentially be overwhelmed by competing self-regarding mental phenomena. But differences appear between unlimited love and compassionate love on other dimensions. A rudimentary mapping onto Sorokin’s noetic love-space clearly places unlimited love at the apex both of extensity/universality, and of duration, with such love lasting “to the edge of doom” (see Shakespearean epigraph, above). In contrast, compassionate love would seem to encompass any and all values along these two dimensions, from the eternal to the ephemeral, and from the universal to the solely individual.

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<sup>1</sup>In his second chapter, “The Five-Dimensional Universe of Psychosocial Love,” Sorokin (1954/2002) writes of *adequacy* as the relation “of the subjective goal of love to its objective manifestation [which] ranges from a complete discrepancy... up to their identity” (p. 17). Similarly, Post (2003b) notes that “any person who wishes to live a life of love must become competent to achieve fitting goals... True lovers... pursue learning objectives that are deemed necessary to serve others well” (pp. 153-154).

Importantly, unlimited love – like compassionate love – has not been conceptualized in identical ways across cultures and faith traditions. But a strong case can be made that different traditions exhibit a “coherent resemblance” to each other in their shared recognition, reverence, and attempt to actively foster similar states of all-embracing other-regarding concern (Peterson & Seligman, 2004, p. 35; Sorokin, 1954/2002; Templeton, 1999). Many other similar phenomena pertaining to unlimited and compassionate love can be observed across traditions, including the inadequacy of unaided human effort for attaining the purer forms of unlimited love (Smith & Novak, 2003; Templeton, 1999, 2000). As a result, numerous vitally important questions about these forms of love – such as how to cultivate them (see epigraph above from Sorokin) – can be framed in the languages of all major cultural traditions.

Surprisingly, however, a sustained scientific effort to understand the antecedents and properties of unlimited love has only emerged in the past decade, since about 2002. Sorokin’s successors, unfortunately, did not build on his brilliant early work in higher forms of love. The construct of unlimited love, and even the less demanding and more common construct of compassionate love, remained largely unstudied for several decades. During this intervening period, many superb social scientists did devote much attention to a variety of conceptually related constructs, such as empathy, altruism and forgiveness (e.g., Batson, 1991; Davis, 1994; McCullough, Pargament & Thoresen, 2000). But none of these related constructs matched the conceptual richness of unlimited love as it had been investigated by Sorokin (1954/2002), or articulated in religious traditions.

By century’s end, for a growing group of scientists and scholars, research on unlimited love as well as on compassionate love seemed conspicuous by its absence. One of the scholars who responded most actively to this gap was Stephen G. Post, a philosopher, theologian, and bioethicist at Case Western Reserve University, who served as primary conference co-chair for an initial scholarly and scientific meeting on love, held at the Massachusetts Institute of Technology (MIT) in October 1999 (Stephen G. Post, personal communication, June 8, 2012). Another active scholar was Lynn Underwood, then vice president of the John E. Fetzer Institute (Fetzer), who also served as conference co-chair (Oman, 2010a, 2011; Underwood, 2008). Out of this meeting emerged an edited book (Post et al., 2002) that addressed many key definitional and conceptual issues, and suggested directions for further research. Importantly, full terminological standardization was not achieved by these scholars, or even attempted, since attempts at uniformity were felt to be premature. Thus, besides referring to unlimited love and compassionate love, publications catalyzed by the conference also referred to “altruistic love” and “agape love” (Post et al., 2002, pp. 1, 56). Substantial overlap and sometimes identical meaning was clearly evident in the various constructs employed in the ensuing scholarship (see Appendix A).

The MIT meeting and its sequelae encouraged the John Templeton Foundation (Templeton) and the John E. Fetzer Institute (Fetzer), two independent foundations and research funders, to support research initiatives on unlimited and compassionate love. Much of the resulting research was informed, directly or indirectly, by scholarly models and definitions that were presented at the MIT meeting or emerged from it. Approaches offered by Post and Underwood were particularly influential, and in many ways complemented each other, as these researchers came from somewhat different disciplinary backgrounds. Post placed greater emphasis on philosophical and humanistic approaches to conceptualizing love, and to tracing conceptual linkages with religious conceptions of agape and other forms of unlimited love. Post

(2003b, p. vii) defined unlimited love in the following terms, which we will call the UL-2003 definition:

The essence of love is to affectively affirm as well as to unselfishly delight in the well-being of others, and to engage in acts of care and service on their behalf; unlimited love extends this love to all others without exception, in an enduring and constant way. Widely considered the highest form of virtue, unlimited love is often deemed a Creative Presence underlying and integral to all of reality

Very similar language had been used slightly earlier, in 2002, to explain the focus of a request for proposals (RFP) issued by the Institute for Research on Unlimited Love (IRUL), an organization founded by Post.<sup>2</sup> When this language was published almost unchanged by Post's (2003b, p. vii) definition above, he further argued that "participation in unlimited love constitutes the fullest experience of spirituality. Unlimited love may result in new relationships, and deep community may emerge around helping behavior, but this is secondary" (p. vii).

So defined, unlimited love is clearly distinguishable from previously well-researched constructs such as empathy, altruism, and forgiveness (see Table 1). In English, the phrase "unlimited love" also has a long history of pre-modern usage that resonates with Post's definition.<sup>3</sup> The UL-2003 definition also aligns unlimited love closely with concepts prevalent in religious and spiritual traditions, and some dictionary definitions of love.<sup>4</sup> However, perhaps due in part to the secularization of many facets of modern life (Post, 2003a; Taylor, 2007), the

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<sup>2</sup>The exact language of the RFP was: "The essence of love is to affectively affirm as well as to unselfishly delight in the well-being of others, and to engage in acts of care and service on their behalf; unlimited love extends this love to all others without exception in a manner that is enduring and constant. Widely considered the highest form of virtue, unlimited love is often deemed a creative presence underlying all of reality. Such love acknowledges for all humanity the absolutely full significance that, because of egoism, hatred, greed, and group conflict we otherwise acknowledge only for ourselves or for those closest to us."

<sup>3</sup>The phrase "unlimited love" was used at least as early as the beginning of the 18<sup>th</sup> century, in a sense very similar to that used here. For example, Thomas Bray (1700/1901, pp. 17-18) referred to Christianity as having principles aiming "to inspire all its Disciples with the noblest Thoughts of God, with an ardent Zeal for his Honour and Glory, and with a boundless and unlimited Love to Mankind; a Love as Extensive as the whole World, and as Intensive as that we have to our selves." Similarly, William Reeves (1709, p. 322), in his English translation of Tertullian's *Apologeticus*, included a header referring to "unlimited love," preceding a section that asked such questions as "If... we Christians are expressly [sic] commanded by our Master to love our Enemies, whom then have we left to hate?" The phrase "compassionate love" also appeared in close to its present sense at least as early as the 17<sup>th</sup> century (see Oman, 2010a).

<sup>4</sup>Love's second definition, according to the Oxford Universal Dictionary, is "In religious use, applied to the paternal benevolence and affection of God, to the affectionate devotion due to God from his creatures, and to the affection of one created being to another thence arising" (Little, Fowler, Coulson & Onions, 1955, p. 1171).

precise phrase “unlimited love” is not widely used in present-day English-speaking popular culture.<sup>5</sup>

To the extent that unlimited love (UL) designates the apex of duration and extensity in Sorokin’s noetic love-space, one may ask to what extent unlimited love is an empirically verifiable phenomenon rather than solely a widespread religious ideal. Sorokin (1954/2002) found it plausible to “assum[e] that the total magnitude of love energy in an individual is finite” (p. 24), and would diminish over time unless “replenished by an inflow from other persons or other sources, empirical or transcendental” (p. 24, emphasis dropped). If human love is finite in this way, then a love that is infinite on each of Sorokin’s dimensions – which we might designate as infinite unlimited love (symbolically, if necessary, as  $UL^\infty$ ) – could only be the property of a higher-than-human power – that is, some sort of Higher Power or God. However, human beings are often viewed in culture and theology as capable of “channeling” (Sorokin, 1954/2002, p. 36) God’s infinite love, as in St. Paul’s famous statement, “not I, but Christ liveth in me” (Gal. 2:20), or in St. Francis’ prayer, “Lord, make me an instrument...” In such instances, from Sorokin’s finite limit perspective, the love attributable to a finite human being, perhaps even to a channel of infinite divine love, would not be infinite per se, but could be said to be a near-unlimited in the sense of being very high on many or all dimensions.<sup>6</sup> Conceptually distinct from unlimited divine love, such a “near-unlimited” love could if necessary be represented symbolically as  $UL^{NU}$ . According to Post (2003b, p. 38-39, emphasis in original), “In Sorokinian terms... ‘unlimited love’... is *love that is very high in intensity, extensity, duration, purity, and adequacy.*”

From the perspective of empirical research, then, Post’s definition of UL conveys two inter-related meanings – infinite unlimited love, and near-unlimited love. Indeed, we will emphasize later that there may be great value in yoking together a religious ideal with an empirically researchable construct, as begun by Templeton and continued by Post (Post, 2003b; Templeton, 2000). If useful, this could be represented symbolically as  $UL = \{UL^\infty, UL^{NU}\}$ . One function of this yoking is to draw ongoing attention to the methods and peak achievements of love across all religious traditions, and to ask: How important is it for each society to cultivate love? How can such cultivation be effectively pursued? All major religious traditions, as well as luminaries such as Martin Luther King, have affirmed that such cultivation is both important and possible (see epigraphs above).

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<sup>5</sup>Web-searches on Google for “unlimited love” showed little evidence of substantial contemporary popular usage (e.g., only 9 hits on 8 June 2012 in the “Google News” database for news that has appeared at “any time.” This excludes pages that mention “Sprint,” which was advertising a new cell phone called “HTC EVO(TM) 4G LTE” with a campaign entitled “Unlimited Love Unlimited EVO” <http://www.marketwatch.com/story/sprint-introduces-unlimited-love-unlimited-evo-ad-campaign-to-launch-htc-evo-4g-lte-smartphone-2012-06-04>, accessed 8 June 2012).

<sup>6</sup>Note, however, Sorokin’s (1954/2002) speculations about the possibility that love energy may have a “‘self-replenishing’ property.... Theoretically love may have its own ‘fission forces’ that make its reservoir inexhaustible” (p. 26). Sorokin laments that “We know next to nothing about the properties of love energy” (p. 26).

Table 1  
*Relation of Unlimited Love to Related Constructs*

| Other Construct    | Comparison to Unlimited Love   |
|--------------------|--|
| Compassionate Love | <i>Unlimited in extensity and other Sorokin dimensions.</i><br>Unlike compassionate love, which may be limited to one or a few individuals, unlimited love (in its ideal, infinite form) extends to all individuals without exception, and is also unlimited in its duration. Unlimited love is also high in intensity, purity, and adequacy.  |
| Empathy            | <i>Positive moral direction.</i><br>Unlike empathy, which has no moral direction, unlimited love is directed to the good of the other.   |
| Compassion         | <i>Not limited to others who suffer.</i><br>Unlike compassion, which might imply a focus limited to alleviating others' suffering, unlimited love is directed to all, and emphasizes enhancing human flourishing.  |
| Altruism           | <i>Unencumbered by diverse technical definitions; requires emotional component.</i><br>Unlike altruism, which has diverse and sometimes conflicting technical definitions in different fields (e.g., economics, evolutionary psychology), unlimited love has one primary set of meanings; and unlike many altruism definitions, which focus only on motives or external consequences, unlimited love requires emotions. <sup>a</sup> |
| Forgiveness        | <i>Not limited to offenders.</i><br>Unlike forgiveness, which is directed to those who have offended, unlimited love is directed to all.   |
| Parental love      | <i>Not limited to children.</i><br>Unlike parental love, which is directed primarily to children, unlimited love is directed to all.   |
| Romantic love      | <i>No implication of sexual attraction or exclusivity.</i><br>Unlike romantic love, which may be hormonally driven and typically implies sexual attraction, unlimited love does not imply sexual attraction, and is directed to all.   |

*Note.* Unlimited love in its ideal (infinite) form differs from compassionate love primarily due to its infinitude on the 5 dimensions of love identified by Sorokin (1954/2002). Thus, for each contrast between another construct (e.g., empathy) and unlimited love, a parallel contrast exists between that construct and compassionate love (see Oman, 2010a; Oman, 2011; see also Underwood, 2008). Table substantially adapted from (Oman, 2011).

<sup>a</sup>Post (2003b, p. 67) states that unlimited love involves “an even balance or co-primacy between emotion and reason.”

In the course of affirming the value of UL, all major faith traditions have made two inter-related claims that are relevant to conceptualizing UL as a research field. On the one hand, they have claimed that above a certain threshold, UL cannot be attained by unaided human effort. In addition, they claim that some form of “grace” is also required. In theistic religions such as Abrahamic traditions or Vaishnavite Hinduism, the needed grace comes especially from a personal God,<sup>7</sup> while in Buddhism, grace may especially come from a cosmic (Amithabha) Buddha or be embedded in the nature of the cosmos (Smith, 1976/1992; Smith & Novak, 2003) – in either case permitting unlimited love to act much like a “Creative Presence” (Post, 2003b, p. vii). In view of this perceived role for grace, many traditions have preferred to say that people “participate” in UL. Saints are understood as uncommonly powerful channels of a UL that originates in the same higher powers that sustain the universe. Most traditions also affirm some type of role for personal effort in that participation.<sup>8,9</sup>

These multiple meanings of UL would seem to hold several implications for UL as an empirically researchable construct:

- UL as a creative force in the universe is difficult, if even possible, to study by contemporary scientific methods. Scientific methods seek to uncover laws that regulate observable phenomena. Most discussions of the relation between science and religion assert that spiritual realities cannot be measured or studied directly by science.
- UL *can* nevertheless be studied as an ideal sought by religious adherents within and across traditions (e.g., the sought-after ideal of “participation” in UL by serving as its channel).

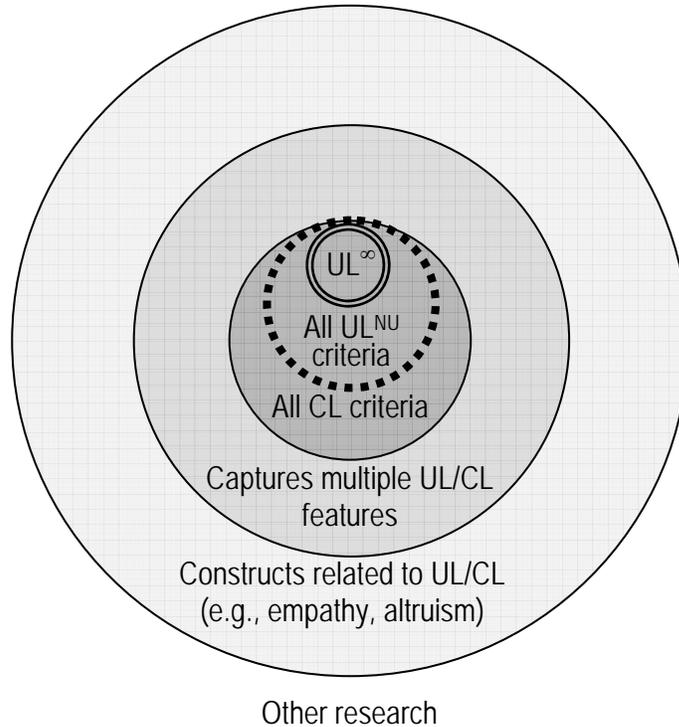
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<sup>7</sup>The view that grace is needed, not only for supreme love, but for any activity, was already expressed in the earliest surviving human scripture, the Hindu Rig Veda (2:28:6), which affirmed that “I am not even mine eyelid’s lord without thee [God]” (*mumugdhyamho nahi tvadāre nimiṣṣcaneśre*, Griffith & Shastri, 1973, p. 149). In Christian scripture, Jesus “sustains all things by his powerful word,” and states that “apart from me you can do nothing” (Hebrews 1:3 and John 15:5, NRSV).

<sup>8</sup>A role for personal effort in Roman Catholicism is illustrated in remarks by Saint Bernard of Clairvaux about the requisites for salvation: “Grace is necessary to salvation, free will equally so – but grace in order to give salvation, free will in order to receive it. Therefore we should not attribute part of the good work to grace and part to free will; it is performed in its entirety by the common and inseparable action of both; entirely by grace, entirely by free will, but springing from the first in the second.” (quoted in Huxley, 1945/1970, pp. 173-174).

<sup>9</sup>The blending of grace with personal effort as viewed by the Hindu *Bhagavad Gita* has been expressed by a contemporary commentator as follows: “Just as physical forces like gravitation are always operating, love, truth, and compassion operate everywhere, under all circumstances. Gravitation is not something added to the world; it is part of its very fabric. Similarly, love and unity are part of the fabric of life, part of its very nature. Just as we respond to these forces, others too will respond. We see only a tiny part of the stage: one corner in space, moment by moment in time. We can act, the Gita reminds us over and over, but we cannot dictate the fruits of our action. ‘Just do your best,’ Sri Krishna says; ‘then leave the results to Me.’” (Easwaran, 1984, vol 3, pp. 483-484).

*Figure 1*  
 Unlimited and Compassionate Love may be Either Partially or Fully Operationalized in Relevant Research



*Notes.*  $UL^\infty$  represents unlimited love that may only be possible for a divinity or higher power;  $UL^{NU}$  represents near-unlimited love that is “very high” (Post, 2003b, p. 39) in intensity, extensity, duration, purity, and adequacy. This figure is adapted from Underwood’s (2008) suggestion that “If we visualize a series of concentric circles, with scientific research on compassionate love as the bull’s-eye, basic research in the outer rings can provide supports for research closer to the bull’s-eye even though distant from the exact construct of interest” (p. 5).

- UL can also be studied as an *experience* of religious or spiritual believers who feel that they have been a recipient of UL (as enacted by God), and may also have been enabled to serve as channels of the UL to others.
- Finally, UL can be studied for its manifestations, full or otherwise, in specific individuals. For example, what is the extensity and duration of the love experienced and manifested by saints? Or by more ordinary people, in the form of compassionate love that approaches UL to greater, middling, or lesser degrees?

Clearly, some of these approaches to studying UL are more logistically challenging than others. Samples of saints are not easily assembled (the Dalai Lama’s recent availability to scientists notwithstanding). Still, it seems quite plausible that progress in some of these approaches could gradually, over time, render the other approaches more feasible.

Thus, an advantage of the UL-2003 definition is that it leaves considerable flexibility in how an individual researcher might operationally define and measure unlimited love in a particular study. As UL emerged as a research field, flexible definitions were useful because unlimited love required attention from a wide range of social and biological sciences, including psychology, sociology, economics, neuroscience, and evolutionary biology. More broadly, it was recognized that not all facets of the UL-2003 definition were likely to be practically relevant or feasible to include in every investigation. For example, projects based on analyses of rich secondary data derived from self-reports (e.g., the project by Smith, discussed later) cannot be expected to offer independent measures that could permit evaluation of the adequacy of UL, independent of the respondent’s *perception* of that adequacy. Thus, IRUL and the MIT conference participants did not expect that every study aimed at elucidating UL would be able to observe all relevant dimensions of UL.

Indeed, at its inception, any new scientific field must grapple not only with ambiguity in definitions and concepts, but also with problems posed by imperfect measurement instruments and unrefined research paradigms. Conceptually and methodologically perfect studies represent more of a guiding ideal than a feasible short-term objective. Thus, the emerging field of unlimited love research might be represented as a target-like diagram consisting of concentric circles (Figure 1). In such a diagram, a study that fully operationalizes all dimensions or distinguishing features of unlimited love, thereby ensuring that conclusions are fully specific to unlimited love, is placed within the circle with the dashed boundary. A study that measures perceptions (or, if ever possible, the actuality) of infinite unlimited love will fall in the central double-bordered solid circle. Studies of compassionate love that fail to meet all UL criteria can be viewed as falling in the third-from-central circle. Studies that fail to coherently address all UL or CL criteria, but still capture *multiple distinguishing features* of unlimited love, thereby providing substantive insight beyond previous research, are placed in a much larger (fourth) circle. Finally, a fifth circle encompasses existing bodies of research on a variety of related constructs, such as empathy and altruism, that also shed considerable light about the possible properties of unlimited love.

### ***Sustained Research on Unlimited Love***

In July 2001, partly spurred by the results of the MIT conference, Stephen G. Post founded the Institute for Research on Unlimited Love, with funds from Templeton. Post is a philosopher, theologian, and bioethicist who has been writing on the theme of love since the early 1980s. One of the early acts of IRUL was to collaborate with Fetzer in funding several empirical studies that could offer scientific understanding of phenomena related to unlimited love. In October, 2000, Fetzer had circulated an RFP that invited applications to study compassionate love, as defined by Underwood (2002) (for full description and findings, see Oman, 2010a; Oman, 2011). Four of the studies proposed in response to the Fetzer RFP were

deemed of special interest to IRUL, which cofunded them.<sup>10</sup> Soon afterwards, in January 2002, IRUL released its own RFP, explicitly focused on unlimited love, entitled “Scientific Research on Unlimited Love – Altruism, Compassion, Service.” The two RFPs were very similar in many details (e.g., support for multiple disciplines, anticipated project duration and support level). But compared to the Fetzer RFP, the IRUL RFP placed greater emphasis on 1) love that extends to all of humanity, and 2) incorporating religious issues, collaborators, and study participants. Key ideas from the IRUL RFP are summarized in Table 2. As noted earlier, the RFP supplied a definition very close to the UL-2003 definition (above). After receipt of 320 letters of intent and 85 full proposals in response to the IRUL RFP, a total of \$1.66 million was given by IRUL in November, 2002, to support 21 projects selected for funding (Post, 2003b). These 21 projects showed considerable thematic and methodological overlap with the Fetzer-funded projects, but also reflected the special emphases of the IRUL RFP.

As these IRUL-funded research projects proceeded, IRUL, pursuant to its mission, engaged in a range of activities to promote and foster understanding of unlimited love. Several of these activities fairly directly supported formation of unlimited love as a scientific research field (Table 3). These included the preparation of an edited book based on the MIT conference (Post et al., 2002), and the sponsorship of a well-attended conference on unlimited love, at that time called “altruistic love” (May/June, 2003). In 2007, several chapters about IRUL-funded research appeared in Post’s (2007a) edited book, *Altruism and health: Perspectives from empirical research*. Post also published multiple journal articles (Post, 2005a, b). Other activities, such as authored books directed at educated laypersons, offered complementary indirect support for field formation (Post & Neimark, 2006; see also Appendix B).

In the ensuing years, IRUL also supported field formation by funding several additional sets of empirical studies focused on unlimited love. These included two developmentally-focused studies (cofunded with Fetzer),<sup>11</sup> and five studies of adolescents made possible by contributions from Judith B. Watson<sup>12</sup> (see Table 3). It also funded five small pilot projects that will not be reviewed here. Since its inception, IRUL has also been instrumental in supporting the production of a books on wide range of topics related to unlimited love, books varying in their manner and degree of addressing scientific field formation or other facets of unlimited love (see Appendix B)

In 2007, IRUL shifted its emphasis to focus more tightly upon empirical investigations that are closely related to experiences of infinite unlimited love (Stephen G. Post, personal communication, May 30, 2012). Many of these later projects are still underway. The set of studies funded from 2002 to 2005 – to be called the *first wave* of IRUL-funded research – thus represents an important, formative period in the establishment of unlimited love as a research field.

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<sup>10</sup>As noted in Table 4, in addition to the four cofunded studies that began in 2001 (Brown, Jeffries, Omoto, and Wink), IRUL later joined Fetzer in cofunding two developmentally-focused studies of compassionate love that began in 2004 (Eisenberg and Smetana were PIs).

<sup>11</sup>For further background about the genesis of the developmental studies see Oman (2010a).

<sup>12</sup>The Judith B. Watson funds also made possible an extension of the RFP-funded project by Peter L. Benson (see Table 4).

Table 2  
*Selected Key Ideas from IRUL’s 2002 Request for Proposals (RFP)*

| Section   | Key Ideas or Quotations from RFP <sup>a</sup>  |
|---|--|
| Title   | <i>Scientific Research on Unlimited Love – Altruism, Compassion, Service</i>   |
| Stated Goals of Initiative (full text of Goals section) | <ul style="list-style-type: none"> <li>• <i>To better understand the human potential for loving and other-regarding emotion and behavior through studies from all scientific disciplines, including human development, epidemiology and health care, neurobiology and neuroscience, positive psychology, sociology, and evolutionary biology, as well as anthropology, political science, economics, and education..</i></li> <li>• <i>To better understand how the expression of unlimited love in society might be fostered, including attention to the roles of education, media, and spiritual-religious beliefs and practices.</i></li> <li>• <i>To promote widespread dialogue on the empirical, theoretical, practical, and socially beneficial dimensions of exemplary lives of service and love.</i></li> </ul> |
| Background  | <p><i>The essence of love is to affectively affirm as well as to unselfishly delight in the well-being of others, and to engage in acts of care and service on their behalf;</i></p> <p><i>unlimited love extends this love to all others without exception in a manner that is enduring and constant.</i></p>   |
| Scope   | <p><i>Research proposals are welcome from all scientific disciplines ... [pertaining to the six topic areas of] human development... public health and medicine... mechanisms by which altruistic love affects health... other regarding virtues... evolutionary perspectives... [and] faith-based communities.</i></p>  |
| Methods   | <p><i>A realistic and rigorously developed methodology, and appropriateness of experimental design.</i></p> <p><i>Where feasible, (a) a collaboration between scientists and scholars of religion and ethics; and (b) inclusion of religiously significant issues; and (c) ... subjects representing faith traditions...</i></p>   |
| Sample Research Questions                               | <p>[Both theoretical and practical questions were among the 58 samples, e.g.,]</p> <ul style="list-style-type: none"> <li>• <i>How far can animal models take us in our understanding of human altruism?</i></li> <li>• <i>How can other-regarding virtues be promoted and taught?</i></li> <li>• <i>How powerful are the effects of religious experience, belief, and/or behavior on the capacity to love in an exemplary way?</i></li> <li>• <i>What is the extent of other-directed love dispensed by faith based organizations?</i></li> <li>• <i>What can non-Western and unconventional perspectives on mind-body connections tell us about love?</i></li> </ul>   |
| Length  | <i>Usually...completed within two years.</i>   |
| Support   | <i>\$30,000-\$100,000 per project; We anticipate funding as many as 30 projects.</i>   |
| Due Dates   | Letter of Intent: March 29, 2002;<br>Full Proposal: July 29, 2002.   |

<sup>a</sup>Direct quotations from the RFP are represented by *italicized text*.

Table 3

*Timeline of Major Field Formation Activities by IRUL in Relation to Jan. 2002 RFP*

| Date          | Event  |
|---------------|--|
| Oct. 1999     | Meeting at MIT of leading scholars of altruism, empathy, and related fields, sponsored by Templeton and Fetzer.  |
| July 2001     | Institute for Research on Unlimited Love (IRUL) founded with funding from the Templeton Foundation   |
| July 2001     | IRUL collaborates with Fetzer Institute in funding 4 projects from a public RFP released by Fetzer in October 2000.  |
| Jan. 2002     | Publication of <i>Altruism and Altruistic love: Science, Philosophy, &amp; Religion in dialogue</i> (edited Post, Underwood, Schloss & Hurlbut)  |
| Jan. 2002     | IRUL releases an RFP entitled “Scientific Research on Unlimited Love – Altruism, Compassion, Service.”   |
| May/June 2003 | IRUL sponsors conference “WORKS OF LOVE: Scientific & Religious Perspectives on Altruism,” (800 participants from 40 countries, including 11 IRUL RFP grantees)  |
| May 2004      | Final conference in Washington, DC, in collaboration with Fetzer Institute, attended by various National Institutes of Health staff members. Presentations of findings from 39 projects (18 IRUL-funded, 18 Fetzer-funded, and 3 jointly funded).  |
| 2007          | Publication of <i>Altruism and health: Perspectives from empirical research</i> (Post, 2007), an edited book that includes presentations of findings on unlimited love and health from several IRUL-funded projects.   |
| 2007          | IRUL begins to emphasize a new model of operations involving greater reliance on selected “external program executives” at other institutions who are able to organize and administer large initiatives, sometimes involving RFPs, that are designed in close collaboration with IRUL and core involvement by Post. Compared to earlier IRUL work, the goals of these initiatives place greater emphasis on more prototypical forms of unlimited love* |
| 2007-present  | Additional IRUL empirical research initiatives, including “Love of God and Neighbor in Relation to the Pursuit of Happiness” (2007-2010), “Helping Others Live Sober” (2007+), and “Flame of Love” (2008-2011).  |

\*Examples of the new emphasis include greater emphasis on spirituality of Unlimited Love (1) as experienced by self-report through interviews and a national survey, (2) in relation to more extensive benevolence; (3) in relation to joy as by-product; (4) in relation to increased helping others and recovery from alcoholism; (5) in relation to theo-philosophical concepts as well as the new physics (Stephen G. Post, personal communication, May 30, 2012).

Table 4

*First Wave of Unlimited Love Research Projects Solely or Jointly Funded by IRUL, by Topic Category*

| Principal Investigator(s) <sup>a</sup>                         | Start | Project Title  |
|--|-------|--|
| I. Evolutionary Psychology                                     |       |  |
| 1. Christopher Boehm   | 2002  | Cross Cultural Survey of Altruistic Behavior   |
| 2. Frans De Waal   | 2002  | An Evolutionary Perspective on the Emotional Prerequisites for Love  |
| 3. Peter Richerson   | 2002  | Unlimited Love in the Laboratory: Evaluating the Effect of Religion on Sharing and Cooperative Behavior                                      |
| 4. David Wilson #1   | 2002  | Altruistic Love, Evolution, and Individual Experience  |
| II. Biological Mechanisms                                      |       |  |
| 5. C. Sue Carter   | 2002  | Is There a Neurobiology of Love?   |
| 6. James Leckman & James Swain                                 | 2002  | Towards an Understanding of the Neurobiology of Parental Love  |
| 7. Stephanie Preston   | 2002  | The Origins of Empathy: Body States, Brain States, and Behavior  |
| III. Public Health & Medicine*                                 |       |  |
| 8. Robert Hierholzer & Bitu Ghafoori                           | 2002  | Care for the Soul: The Role of Divine Love and Human Love in Adjustment to Military Trauma   |
| 9. Ellen Levine  | 2002  | Effects of Compassionate/Loving Intention as a Therapeutic Intervention by Partners of Breast Cancer Patients: A Randomized Controlled Trial |
| 10. Eric Loucks  | 2005  | Altruism/Agape Love and the Pathways Project   |
| IV. Development: Child and Adolescent                          |       |  |
| 11. Peter Benson <sup>a</sup>                                  | 2002  | Adolescent Other-regarding Dispositions and Mental Health  |
| 12. Nancy Eisenberg, Doran C. French & Sri Pidada <sup>b</sup> | 2005  | Indonesian Adolescents' Caring and Caring Relationships  |
| 13. Alan Fogel   | 2002  | Love, Emotion and Empathy: Infancy to Early Childhood  |
| 14. Kevin Reimer   | 2005  | Naturalistic Conceptions of Moral Commitment: Pathways for Resiliency in Adolescent Personality  |
| 15. Carolyn Schwartz   | 2005  | Evaluating the Health Benefits of Altruism in Adolescents: A Cross-sectional Survey  |
| 16. Judith Smetana #1  | 2002  | Antecedents and Correlates of Civic Engagement for African American Adolescents and Their Parents  |
| 17. Judith Smetana #2 <sup>b</sup>                             | 2005  | Selfishness and Selflessness in Adolescent-Parent Relationships  |
| 18. Margaret Spencer   | 2005  | Investigating Helping Behavior and Depression Among Middle Childhood and Early Adolescent Youth  |
| 19. David Wilson #2*   | 2005  | Health and the Ecology of Altruism   |

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|                                      |                              |   |
|--------------------------------------|------------------------------|---|
| V. Development: Adult and Late Adult |                              |   |
| 20.                                  | Robert Emmons                | 2002 The Gift of One’s Self: Expressions of Unlimited Love and Gratitude in Organ Donors and Recipients   |
| 21.                                  | Julie Exline                 | 2002 The Self as a Conduit of Love  |
| 22.                                  | Vincent Jeffries             | 2001 Benevolent Love and Marriage   |
| 23.                                  | Alan Omoto                   | 2001 Volunteerism, Community, and Compassionate Acts Among Older Adults   |
| 24.                                  | Paul Wink & Michelle Dillon  | 2001 The Development, Antecedents, and Psychosocial Implications of Altruism in Late Adulthood  |
| VI. Faith-Based Communities          |                              |   |
| 25.                                  | Courtney Cowart*             | 2002 Self-Forgetfulness in Seeking the Lost: A Sociological Study of Relentless Love and Compassionate Service at Ground Zero                         |
| 26.                                  | Samuel Oliner*               | 2002 Unlimited Love, Compassion, and Forgiveness: Acts of Moral Exemplars   |
| 27.                                  | Margaret Poloma*             | 2002 Charismatic Empowerment and Unlimited Love: A Social Psychological Assessment  |
| 28.                                  | Robert Wuthnow*              | 2002 Faith-Based Service Organizations, Altruistic Caregiving, and Understandings of Love   |
| VII. Modern Society                  |                              |   |
| 29.                                  | Eleanor Brown                | 2001 The Impacts of Religious, Intellectual, and Civic Engagement on Altruistic Love and Compassionate Love as Expressed Through Charitable Behaviors |
| 30.                                  | Cheryl Koopman & Lisa Butler | 2002 What Love Has To Do With It: Altruism, Generativity and Spirituality in the Aftermath of 9/11/01   |
| 31.                                  | Tom Smith <sup>b</sup>       | 2002 A National Study of Altruistic and Unlimited Love  |
| VIII. Applied Intervention           |                              |   |
| 32.                                  | Stephen Wright & Arthur Aron | 2002 Other-Regarding Love for Individuals Outside One’s Social Group  |

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\*Project in (IV) child/adolescent development category by Wilson #2 also have relevance to category (I) evolutionary psychology; projects in (VI) faith-based community category by Cowart, Poloma, and Wuthnow also have relevance to category (III) public health and medicine, and the projects by Cowart and Oliner have relevance to (VII) modern society.

<sup>a</sup>Post (2007b) lists two projects with Benson as PI: “Cultivating Adolescents’ Other-Regarding Virtues: The Developmental Pathways to Unlimited Love” (begun in 2002) and “Other-regarding Dispositions and Mental Health” (begun in 2005). However, these represent a single project and its continuation, and produced a single final report. For simplicity, they are both designated here by the name listed in this table.

<sup>b</sup>Projects jointly funded with Fetzer.

### ***Impact of the First Wave of Research***

These pioneering and cooperative first-wave research initiatives by IRUL raise many intriguing questions. What was discovered in the research? How did the funded studies operationalize UL? Now that more than a dozen years has passed after the MIT meeting, to what extent has unlimited love emerged as a novel and coherent field of empirical research, with distinctive concepts, measures, and findings? To what extent have research findings, most of which initially appeared in peer-reviewed professional journals, been further disseminated in books? How could unlimited love be further advanced as an emerging field of research, and what are important questions for future research?

An earlier report and refereed journal article examined the emergence of compassionate love as a research field, documenting progress in developing measures as well as increased utilization of the term “compassionate love” by independent empirical researchers (Oman, 2010a, 2011). However, as noted earlier, unlimited love is a more focused and also a more multifaceted construct than compassionate love. To what extent has UL emerged as a research field independent of CL? To what extent have the distinctive facets of UL, those facets of UL that do not pertain to CL, been studied? Oman (2010a) suggested that there might be rough equivalence between the two groups of funded projects (by Fetzer and IRUL) in the fullness of how other-regarding love was operationalized (i.e., similar degrees of centrality in Figure 1) – is this correct?

The present report addresses all of these questions. Our primary focus is the first wave of IRUL-funded research, consisting of the combined total of 32 funded projects generated by the initial 2002 IRUL RFP and the two follow-up initiatives mentioned earlier. For purposes of discussion and analysis, we have grouped them into 8 categories, defined by nature of topic and/or design (Table 4). These projects have now yielded at least 45 publications in peer-reviewed journals, of which 39 reported findings concerning unlimited love (Table 5).

### **Methods**

Publications (journal articles, chapters, books, and others) were identified through several processes to ensure comprehensiveness and specificity. First, IRUL maintained a cumulative data base of publications based on project reports submitted by PIs. To ensure comprehensiveness, PI reports to IRUL and IRUL reports to the funder of the initial RFP (the John Templeton Foundation) were also scanned for publications. Searches based on PI names were conducted in PubMed, Google Scholar, and in PsycInfo and other databases supported by ProQuest. A preliminary list was compiled, and all PIs were asked in June 2011 to identify any gaps. Multiple new publications were identified at each stage. Finally, several publications were eliminated when screening showed that they neither cited IRUL grant support, nor possessed a coherent relation to the original funded project design. Similar procedures were used to assemble lists of other project publications which consisted primarily of books and chapters in edited books, but also one public dataset.

Each of the peer-reviewed journal articles was then analyzed to determine whether it contained a construct that was a coherent proxy for unlimited love (hereafter abbreviated as “UL” (see Figure 1). Each article was then rated for the degree to which its investigation was centered around its UL-related construct. Each article was rated as high, medium (h/m), corresponding, respectively, to i) a primary focus, or ii) a variable of major secondary interest

Table 5

Peer-Reviewed Journal Publications Produced by IRUL-Funded Research Projects (First Wave)

| #   | PI              | Author list                                 | Centrality <sup>a</sup> | Measure / design <sup>b</sup> | Subjects <sup>i</sup>                  | UL-related construct   | Limit transcended    | Finding (causal direction interpreted) <sup>c</sup>               | R/S <sup>d</sup> | Cites <sup>e</sup> | Terms <sup>f</sup> |
|---|-----------------|---|-------------------------|-------------------------------|--|--|----------------------|---|------------------|--------------------|--------------------|
| <b><u>(I) Evolutionary Psychology</u></b> |                 |   |                         |                               |  |  |                      |   |                  |                    |                    |
| 1.  | Boehm           | Boehm (2004b)                               | h                       | Theory                        | Chimpanzees, bonobos, hunter-gatherers | Communal sharing of larger game  | Kin                  | Social pressure for stable nutrition + no alpha behavior → UL     | -                | -                  | -                  |
| 2.  | Boehm           | Boehm (2008b) <sup>g</sup>                  | h                       | Theory                        | 10 hunter-gatherer societies           | Altruism (sharing and generosity)                                      | Self and kin         | Positive social selection → genetic favorability of UL            | -                | -                  | a                  |
| 3.  | de Waal         | Romero Castellano et al (2010) <sup>g</sup> | h                       | Rated                         | 29 chimpanzees                         | Consolation of victims   | Self                 | Female or socially close → UL                                     | -                | -                  | e                  |
| 4.  | Richerson       | Paciotti Richerson et al (2011)             | h                       | Design+ Closed                | 330 college students<br>183 adults     | Money sent demonstrating generosity, trust, or cooperation             | Self-interest        | Relating to religion as an end in itself (intrinsic) → UL         | **               | -                  | a                  |
| 5.  | Wilson #1       | Wilson (2005)                               | h                       | Design                        | 35 religions                           | Religious traditions   | Self-interest        | UL is evolutionarily adaptive                                     | **               | -                  | -                  |
| 6.  | Wilson #1       | Eldakar Wilson et al (2006)                 | h                       | Closed                        | 330 undergraduads                      | Behavioral or emotional inclination to help needy or to punish cheater | Self-interest        | kinship → UL (helping) and UL (punishing)                         | -                | -                  | -                  |
| <b><u>(II) Biological Mechanisms</u></b>  |                 |   |                         |                               |  |  |                      |   |                  |                    |                    |
| 7.  | Carter          | Bales Kim et al (2004)                      | h                       | Rated                         | 80 male prairie voles                  | Alloparenting behaviors  | Offspring            | Hormones (oxytocin & vasopressin) → UL                            | -                | -                  | -                  |
| 8.  | Carter          | Ruscio Sweeny etl al (2008)                 | h                       | Design+ Theory                | 49 prairie voles                       | Parental behavior  | Offspring            | UL → less hippocampal neurogenesis                                | -                | -                  | -                  |
| 9.  | Carter          | Carter Boone et al (2009)                   | m                       | Review                        | voles, mice                            | Alloparenting, parenting, & pair-bonding                               | Offspring, isolation | Stress experience (mild) → hormones (oxytocin & vasopressin) → UL | -                | -                  | -                  |
| 10.                                       | Leckman & Swain | Swain Lorberbaum et al (2007)               | h                       | Review                        | Parents (human/non-human)              | Maternal behavior toward infant  | Self-preoccupation   | Oxytocin and dopaminergic systems → UL                            | -                | -                  | 1e                 |

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| #   | PI              | Author list                  | Centrality <sup>a</sup> | Measure / design <sup>b</sup> | Subjects <sup>i</sup>           | UL-related construct  | Limit transcended        | Finding (causal direction interpreted) <sup>c</sup>   | R/S <sup>d</sup> | Cites <sup>e</sup> | Terms <sup>f</sup> |
|-----|-----------------|------------------------------|-------------------------|-------------------------------|---------------------------------|---|--------------------------|---|------------------|--------------------|--------------------|
| 11. | Leckman & Swain | Swain Tasgin et al (2008)    | h                       | Mech+ Closed                  | 12 mothers                      | Activation of regions of the brain related to hormone regulation, motivation, reward, and arousal | Self, conscious response | Vaginal delivery → higher UL response to baby cry than cesarean section delivery                                      | - -              | -                  | e                  |
| 12. | Leckman & Swain | Kim Leckman et al (2010)     | h                       | Mech+ Closed                  | 26 mothers                      | High maternal care in childhood   | Self, time               | UL → higher brain activity in response to infant cry, grey matter for emotional processing, and lower stress response | - -              | -                  | -                  |
| 13. | Leckman & Swain | Gordon, Martin et al (2011)  | m                       | Review                        | Voles, mice, parents, children  | Parental caring for offspring   | Self                     | Receiving UL as infant → increased oxytocin → increased UL as parent  | - -              | -                  | -                  |
| 14. | Leckman & Swain | Kim Feldman et al (2011)     | h                       | Mech+ Rated                   | 17 mothers                      | Maternal sensitivity  | Self                     | Breastfeeding → higher activation of brain regions involved in maternal caregiving → UL                               | - -              | -                  | -                  |
| 15. | Leckman & Swain | Swain Kim Ho (2011)          | h                       | Review                        | Mothers (human/non-human)       | Maternal response to baby-cry   | Self                     | UL is directed & reinforced by cortisol, oxytocin, dopamine, & endogenous opioids                                     | - -              | -                  | -                  |
| 16. | Leckman & Swain | Swain (2011)                 | h                       | Review                        | Mothers (human/non-human)       | Parenting impulses, thoughts, emotions, and behaviors   | Self                     | UL response is directed by processing of infant stimulus via cortico-limbic circuits                                  | - -              | -                  | 1e                 |
| 17. | Preston         | Preston Bechara et al (2007) | h                       | Design+ Closed                | 33 adults (16 in E1 + 17 in E2) | Cognitive empathy   | Self                     | Experience of similar situation → stronger UL → self/other-equivalent brain activation                                | - -              | -                  | e                  |

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| #   | PI                    | Author list                               | Centrality <sup>a</sup> | Measure / design <sup>b</sup> | Subjects <sup>i</sup>  | UL-related construct                             | Limit transcended     | Finding (causal direction interpreted) <sup>c</sup>   | R/S <sup>d</sup> | Cites <sup>e</sup> | Terms <sup>f</sup> |
|---|-----------------------|---|-------------------------|-------------------------------|--|--|-----------------------|---|------------------|--------------------|--------------------|
| <b>(III) Public Health &amp; Medicine</b>       |                       |   |                         |                               |  |  |                       |   |                  |                    |                    |
| 18.   | Hierholzer & Ghafoori | Hierholzer et al (2008)                   | h                       | Closed+ Interview             | 102 veterans   | Nurturance + secure attachment styles            | N/A <sup>h</sup>      | Received UL→ lower PTSD symptoms  | *                | -                  | l                  |
| 19.   | Levine                | Radin Stone et al (2008)                  | h                       | Design                        | 36 couples (healthy or with breast cancer)                     | Distant healing intention                        | Sensory communication | Receiving UL→ activation of autonomic nervous system  | *                | -                  | c                  |
| <b>(IV) Development: Child &amp; Adolescent</b> |                       |   |                         |                               |  |  |                       |   |                  |                    |                    |
| 20.   | Eisenberg             | French, Eisenberg et al (2008)            | h                       | Closed                        | 183 Indonesian Muslim youth                                    | Prosocial behavior                               | Self, kin             | religiousness→UL (cross-sectionally)  | **               | f <sub>+</sub>     | -                  |
| 21.   | Eisenberg             | Eisenberg, Sallquist et al (2009)         | h                       | Closed                        | 1254 Indonesian youth  | Empathy, prosocial behavior                      | Self, kin             | friend with minority→UL   | **               | -                  | e                  |
| 22.   | Eisenberg             | Sallquist, Eisenberg et al (2010)         | h                       | Closed                        | 959 Youth, Indonesian  | Prosocial behavior                               | Self, kin             | religiousness→UL (longitudinally)   | **               | -                  | -                  |
| 23.   | Reimer                | Reimer Goudelock et al (2009)             | h                       | Closed+ Interview             | 1550 urban high school students; 30 urban high school students | Moral identity; Volunteer behaviors & commitment | Self, kin             | Schema connecting goals and action → UL <sub>1</sub> (moral maturity) → UL <sub>2</sub> (volunteer) | *                | b <sub>+</sub>     | -                  |
| 24.   | Schwartz              | Schwartz Keyl et al (2009)                | h                       | Closed                        | 457 confirmed Presbyterian teens                               | Helping behaviors and orientation                | Self                  | Age, positive religious coping → UL → well-being (e.g., positive social relations, purpose in life) | *                | p <sub>7</sub>     | a                  |
| 25.   | Smetana #1            | Smetana & Metzger (2005)                  | h                       | Closed+ Interview+ Rated      | 76 African American adolescents                                | Civic engagement (current, future intended)      | Self, peer group      | Spirituality, mother's civic engagement & good communication → UL                                   | **               | -                  | c                  |
| 26.   | Smetana #2            | Smetana, Tasopoulos-Chan et al (2009)     | h                       | Interview                     | 118 families   | Youth's moral concern for others                 | Self                  | Usual development ↔ attention to duty + UL  | -                | -                  | c                  |
| 27.   | Spencer               | Spencer, Fegley et al (2006) <sup>g</sup> | m                       | Closed                        | 699 school children grades 4-8                                 | Family helping behavior                          | Self                  | UL at young age→ increased distress<br>UL in girls → increased distress                             | -                | -                  | -                  |

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| #   | PI               | Author list                               | Centrality <sup>a</sup> | Measure / design <sup>b</sup>        | Subjects <sup>i</sup>                          | UL-related construct                            | Limit transcended           | Finding (causal direction interpreted) <sup>c</sup>                                       | R/S <sup>d</sup>                  | Cites <sup>e</sup> | Terms <sup>f</sup> |
|---|------------------|---|-------------------------|--------------------------------------|--|---|-----------------------------|---|-----------------------------------|--------------------|--------------------|
| 28.   | Wilson #2        | Wilson O'Brien et al (2009)               | h                       | Closed+<br>Other                     | 1551 students<br>grades 6-12                   | Other- and<br>society-oriented<br>behaviors     | Self, kin                   | Social support from<br>multiple sources,<br>neighborhood quality<br>→ UL in adolescents   | * -                               | -                  | a                  |
| <b><u>(V) Development: Adult &amp; Late Adult</u></b> |                  |   |                         |                                      |  |   |                             |   |                                   |                    |                    |
| 29.   | Exline           | Exline Hill (2012)                        | h                       | Design+<br>Closed                    | 197 adults<br>286 undergrads<br>217 undergrads | Generosity                                      | Self                        | Humility → UL   | * -                               | -                  | -                  |
| 30.   | Exline           | Exline (2012)                             | h                       | Closed                               | 217 undergrads                                 | Act of kindness                                 | Varies                      | Humility → more<br>positive experience of<br>receiving UL                                 | * P <sub>3</sub> P <sub>7</sub>   | 1                  | 1                  |
| 31.   | Exline           | Exline Lisan Lisan (2012)                 | h                       | Design+<br>Closed+<br>Open+<br>Rated | 217 undergrads<br>90 undergrads                | Non-normative<br>acts of kindness               | Self, social<br>expectation | Receiving UL →<br>gratitude, amazement,<br>shame, mistrust, lower<br>charitable donations | -- SP <sub>3</sub> P <sub>7</sub> | 1                  | 1                  |
| 32.   | Jeffries         | Jeffries (2002)                           | h                       | Theory                               | -  | Virtuous love                                   | Self                        | UL+attractive love<br>interact via several<br>processes                                   | * s                               | 1                  | 1                  |
| 33.   | Jeffries         | Jeffries (2006)                           | h                       | Closed+<br>Interview                 | 49 couples+14<br>individuals.                  | Benevolent love                                 | Self                        | Religion →UL<br>UL→marital quality  | ** s                              | 1                  | 1                  |
| 34.   | Wink &<br>Dillon | Wink & Dillon (2003)                      | h                       | Closed                               | 181 Berkeleyan                                 | Generativity,<br>wisdom                         | Self                        | Religiosity/<br>spirituality → UL   | ** -                              | -                  | -                  |
| 35.   | Wink &<br>Dillon | Dillon, Wink et al (2003)                 | h                       | Closed                               | 183 Berkeleyan                                 | Generativity                                    | Self                        | Religiosity/<br>spirituality → UL   | ** -                              | -                  | a                  |
| <b><u>(VI) Faith-Based Communities**</u></b>          |                  |   |                         |                                      |  |   |                             |   |                                   |                    |                    |
| 36.   | Oliner           | Oliner (2005)                             | h                       | Design+<br>Closed                    | 631 people                                     | Forgiveness,<br>agape love, etc                 | Self, kin,<br>ethnicity     | Many UL measures<br>correlate positively  | * sbu <sub>2</sub> P <sub>3</sub> | a1                 | 1                  |
| 37.   | Wuthnow          | Wuthnow Hackett et al (2004) <sup>g</sup> | h                       | Design                               | 2077 adults<br>residing in<br>community        | Organization seen<br>as com-<br>passionate, etc | Profession-<br>al motive    | Congregations (much<br>more than other faith-<br>based orgs.) → UL                        | ** -                              | -                  | -                  |
| <b><u>(VII) Modern Society</u></b>                    |                  |   |                         |                                      |  |   |                             |   |                                   |                    |                    |
| 38.   | Brown            | Brown & Ferris (2007)                     | h                       | Closed                               | 32,336 adults                                  | Charitable<br>behavior &<br>volunteering        | Self, kin                   | Social capital<br>education, religion →<br>UL   | ** -                              | -                  | -                  |

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|-----|------------------|----------------------------|-------------------------|-------------------------------|-----------------------|---------------------------|-------------------|--|------------------|--------------------|--------------------|
| 39. | Koopman & Butler | Azarow Manley et al (2003) | h                       | Closed+ Rated                 | 137 adults            | Altruism and generativity | Self              | UL is unrelated to political orientation; UL is highest directly following collective trauma | -                | SP <sub>3</sub>    | a                  |

*Note.* Additional primary research reports were in books for projects by Poloma, Cowart, Oliner, and Wuthnow. Also, several projects produced journal reports that acknowledged support from IRUL but were tangential results rated as not addressing a closely UL-related construct. Such tangential reports were produced by projects for Carter (Ruscio, Sweeny, Hazelton, Suppatkul & Carter, 2007); Leckman & Swain (Kim, Leckman, Mayes, Feldman et al., 2010); Hierholzer & Ghafoori (Ghafoori & Hierholzer, 2010); Omoto (Omoto & Aldrich, 2006; Schlehofer, Omoto & Adelman, 2008); and Koopman & Butler (Butler et al., 2005).

<sup>a</sup>UL (as operationalized) was a highly central to the report (h), moderately central (m), or peripheral and of low centrality (l); this rating is independent of whether or not the *operationalization* captures much or little of UL as a distinctive construct (Figure 1).

<sup>b</sup>UL-related variable was incorporated into the study by qualitative interview (Interview), closed-response self-report question (Closed), Open-response self-report question (Open), observer ratings (Rate), design/manipulation (Design), mechanical observation (Mech), or other (Other).

<sup>c</sup>UL-related finding, with causal direction as indicated (by arrows) by authors' primary theoretical framework. Since many study designs did not support strong causal inferences, reverse causality cannot be ruled out in many cases.

<sup>d</sup>Religion or spirituality (S/s) are a central focus (\*\*), or addressed theoretically for at least 3 sequential sentences (\*) or with a variable (\*).

<sup>e</sup>Citations to key references in previous UL literature, coded as s (any edition of Sorokin, 1954/2002), b (entirety of Post et al., 2002), u<sub>2</sub> (Underwood, 2002), p<sub>2</sub> (Post, 2002), b<sub>+</sub> (other chapters of Post et al., 2002), p<sub>3</sub> (Post, 2003b), f (entirety of Fehr & Sprecher, 2008), u<sub>8</sub> (Underwood, 2008), f<sub>+</sub> (other chapters of Fehr & Sprecher, 2008), p<sub>7</sub> (Post, 2007a), p<sub>5</sub> (Post, 2005a) or x (publications from other UL projects listed in Table 4).

<sup>f</sup>Terminology used for UL: Indicates whether the article uses recognizable UL-related names in text, at a threshold of 4 or more times: "compassionate love" (✓), "love" (l), "compassion" (c), "altruism" (a), or "empathy" (e); Terms unused 4 or more times in any report: "unlimited love" or "unconditional love" (u), "altruistic love" (+).

<sup>g</sup>Papers determined as discussing or supported by the RFP, although without explicit published acknowledgement (Exline, Root, Yadavalli, Martin & Fisher, 2011; Spencer et al., 2006; Wuthnow et al., 2004), or acknowledged only indirectly to the John Templeton Foundation (i.e., the source of much of IRUL's funding: Boehm, 2008b).

<sup>h</sup>For Ghafoori, Hierholzer et al (2008) the limit transcended was not explicitly clear in the text, in part because of the multiple facets of UL

<sup>i</sup>Subjects (e.g., "mothers") are human unless otherwise indicated.

Table 6

## Non-Journal Primary Reports Produced by IRUL-Funded Research Projects (First Wave)

| #  | PI     | Genre: Author list  | Centrality <sup>a</sup> | Measure / Design <sup>b</sup>           | Subjects  | UL-Related Construct  | Limit transcended                | Finding (causal direction interpreted) <sup>c</sup>   | R/S <sup>d</sup> | Cites <sup>e</sup>                            | Terms <sup>f</sup> |
|--|--------|---|-------------------------|---|---|---|----------------------------------|---|------------------|---|--------------------|
| <b><u>(III) Public Health &amp; Medicine</u></b>       |        |   |                         |   |   |   |                                  |   |                  |   |                    |
| 1.   | Loucks | Personal communication: Loucks (2012, July 24, personal communication #10393 personal communication #10393) | h                       | Closed                                  | 268 adults  | Engagement in 10 'ways' of love (compassion, helpfulness, etc.)   | Blend of self, kin, social group | UL→lower female heart disease risk  | N/A              | N/A   | N/A                |
| <b><u>(IV) Development: Child &amp; Adolescent</u></b> |        |   |                         |   |   |   |                                  |   |                  |   |                    |
| 2.   | Benson | Technical report: Sesma & Benson (2005)   | h                       | Closed                                  | 220,922 Students (S1: 217,277; S2: 2714; S3: 931)   | Regard for others (disposition and action)                        | Self, kin                        | Increase in UL(disposition) → worse mental health (externalizing)   | -                | p <sub>5</sub>                                | a                  |
| 3.   | Fogel  | Meeting presentation: Fogel (2012, May 14)  | h                       | Interview + Rated                       | 47 mother/child dyads                               | Prosocial behavior, empathy                                       | Self                             | self-awareness by toddlers→ UL <sub>1</sub> (prosociality)+ UL <sub>2</sub> (empathy) (age 5) Secure attachment age 5→UL <sub>1</sub> +UL <sub>2</sub> ; Female age 5→UL <sub>1</sub> | N/A              | N/A   | N/A                |
| <b><u>(V) Development: Adult &amp; Late Adult</u></b>  |        |   |                         |   |   |   |                                  |   |                  |   |                    |
| 4.   | Emmons | Dissertation: Greiner (2004)  | h                       | Closed + Interview                      | 160 undergrads<br>182 undergrads<br>83 undergrads   | Organ donation when dead (pledge) or alive                        | Body identification; intactness  | Gratitude→UL <sub>1</sub> (alive)*<br>Empathy→UL <sub>2</sub> (dead)  | -                |   | ae1                |
| <b><u>(VI) Faith-Based Communities**</u></b>           |        |   |                         |   |   |   |                                  |   |                  |   |                    |
| 5.   | Cowart | Book: Cowart (2004)   | h                       | Interview                               | Hundreds of volunteers                              | Love that inspired post-9/11 ground-zero volunteering             | Self, kin, group                 | UL→numerous benefits (conquer fear, bless, unite, etc.)   | **               | -   | ec1                |
| 6.   | Oliner | Book: Oliner and Zylicz (2008)  | h                       | Observe (historical)+ Closed+ Interview | 44 intergroup apologies<br>519 individuals<br>Other | Intergroup apology, altruism, forgiveness, reconciliation         | Self, kin, group                 | UL(intergroup apology) may→better relations, forgiveness, reconciliation  | *                | su <sub>2</sub> p <sub>3</sub> p <sub>7</sub> | acel               |
| 7.   | Poloma | Book: Poloma & Hood (2008)  | h                       | Interview+ Closed                       | 55 churchgoers<br>117 homeless beneficiaries        | Godly love (response to perceived divine love); empathy; altruism | Self, kin, religious group       | charismata→UL spiritual practices→ UL(altruism)   | **               | sp <sub>2</sub>                               | acel               |

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| #  | PI            | Genre: Author list                          | Centrality <sup>a</sup> | Measure / Design <sup>b</sup>   | Subjects  | UL-Related Construct                        | Limit transcended   | Finding (causal direction interpreted) <sup>c</sup>                        | R/S <sup>d</sup> | Cites <sup>e</sup>            | Terms <sup>f</sup> |
|--|---------------|---|-------------------------|---------------------------------|---|---|---------------------|--|------------------|-------------------------------|--------------------|
| 8.   | Wuthnow       | Book:<br>Wuthnow (2004)                     | m                       | Interview+<br>Closed+<br>Theory | 140 qualitative interviews of care recipients; 2077 surveys | Organization seen as compassionate, etc     | Professional motive | UL is complex; Congregations (much more than other faith-based orgs.) → UL | **               | sbb,p <sub>2</sub>            | aclu               |
| <b><u>(VII) Modern Society</u></b>         |               |   |                         |                                 |   |   |                     |  |                  |                               |                    |
| 9.   | Omoto         | Chapter:<br>Omoto, Malsch, & Barraza (2008) | h                       | Closed                          | 228 older adults  | Love as perceived motive                    | Self, kin           | UL→community volunteering  | *                | u <sub>2</sub> p <sub>7</sub> | ✓                  |
| 10.  | Smith         | Chapter:<br>Smith (2008)                    | h                       | Closed                          | 2695 adults, US nationally representative                   | Empathy; Altruistic behavior                | Self, kin           | Religion, group member, values helping friends↔UL                          | *                | bu <sub>2</sub>               | ae+                |
| <b><u>(VIII) Applied Interventions</u></b> |               |   |                         |                                 |   |   |                     |  |                  |                               |                    |
| 11.  | Wright & Aron | Chapter:<br>Davies, Wright et al (2011)     | m                       | Design +<br>Closed              | Undergrads of ethnic groups (328 white)                     | Positive attitude toward other ethnic group | Own ethnic group    | Fast friends procedure - with person of other ethnic group → UL            | f <sub>+</sub>   | -                             | -                  |

<sup>a</sup>UL (as operationalized) was a highly central to the report (h), moderately central (m), or peripheral and of low centrality (l); this rating is independent of whether or not the *operationalization* captures much or little of UL as a distinctive construct (Figure 1).

<sup>b</sup>UL-related variable was incorporated into the study by qualitative interview (Interview), closed-response self-report question (Closed), Open-response self-report question (Open), observer ratings (Rate), design/manipulation (Design), mechanical observation (Mech), or other (Other).

<sup>c</sup>UL-related finding, with causal direction as indicated (by arrows) by authors' primary theoretical framework. Since many study designs did not support strong causal inferences, reverse causality cannot be ruled out in many cases.

<sup>d</sup>Religion or spirituality (S/s) are a central focus (\*\*), or addressed theoretically for at least 3 sequential sentences (\*) or with a variable (\*).

<sup>e</sup>Citations to key references in previous UL literature, coded as s (any edition of Sorokin, 1954/2002), b (entirety of Post et al., 2002), u<sub>2</sub> (Underwood, 2002), p<sub>2</sub> (Post, 2002), b<sub>+</sub> (other chapters of Post et al., 2002), p<sub>3</sub> (Post, 2003b), f (entirety of Fehr & Sprecher, 2008), u<sub>8</sub> (Underwood, 2008), f<sub>+</sub> (other chapters of Fehr & Sprecher, 2008), p<sub>7</sub> (Post, 2007a).

<sup>f</sup>Terminology used for UL: Indicates whether the article uses recognizable UL-related names in text, at a threshold of 4 or more times: “unlimited love” or “unconditional love” (u), “compassionate love” (✓), “altruistic love” (+), “love” (l), “compassion” (c), “altruism” (a), or “empathy” (e).

(none of the articles included UL as a variable of merely minor interest). Studies with UL as a variable were also coded for information to address the following questions:

1. *Conceptual operationalization*. How was the UL-related construct conceptualized (e.g., as an experience of compassion, as prosocial behavior, etc.)?
2. *Limit transcended*. How extensive is the love that is operationalized in the UL-related construct? When the UL-related construct applies, has a research participant transcended self-love by having other-regarding love for another person? Has he/she transcended kin-love by having other-regarding love for non-kin? Or has he/she overcome some other obstacle, such as social norms and expectations, in order to enact love?
3. *Measurement strategy/design*. How was the UL variable assessed or imposed? For example, was it assessed by closed-form questionnaires, by an open-form semi-structured interview, by observer ratings, or was it imposed by design in an intervention?
4. *Participants*. Who and how numerous were the study participants?
5. *Findings*. What were the major findings related to UL, interpreted in terms of the investigators' own theoretical framework (i.e., regarding causal direction)?
6. *Religion/spirituality*. What is the role in the report, if any, of religion/spirituality? (e.g., as a central focus versus as a covariable of secondary importance)
7. *Citing UL literature*. Does the report cite the most relevant published literature on UL, operationally defined as Sorokin (1954/2002), Post (2003b), the edited book (Post et al., 2002), or publications from other UL projects?
8. *Using recognizable UL terms*. Does the article use one of the common descriptors of UL, such as “unlimited love,” “unconditional love,” “compassionate love,” “altruistic love”? A threshold for significant usage was set at 4 or more uses of the phrase in text (excluding reference sections). Also tracked were significant usages of the related terms “love,” “compassion,” “altruism” and “empathy.”

As noted earlier, for reporting findings, the projects were grouped into 8 categories, defined by nature of topic and/or design (Table 4). Some categories were defined primarily by substantive topic (e.g., III. Health & Medicine), others primarily by study population (e.g., VI. Faith-Based Communities) or design and theoretical framework (e.g., I. Evolutionary Psychology; VIII. Applied Intervention). These categories were intended to be broad enough to (in most cases) contain multiple studies, but sufficiently circumscribed to aid in the recognition and reporting of intelligible patterns in methods, findings, and recommendations for future directions.<sup>13</sup>

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<sup>13</sup>The author does not intend to claim that the present typology of UL research studies is optimal for all purposes. Alternative typologies have been employed elsewhere (e.g., groupings for sessions at conferences, or in the 2002 RFP).

## **Results**

### **Primary Publications and Journal Articles: Analysis by Category**

By July, 2012, a majority (n=23) of the 32 funded projects had produced peer-reviewed journal articles that were published or in press. A total of 39 peer-reviewed articles on UL-related constructs were identified, including 31 empirical studies and 8 reviews/theoretical articles. Of projects producing journal articles, all (23/23) had produced at least one journal article in which a construct related to unlimited love was not only addressed, but was a primary focus or major topic of interest. Many of the projects, including some without peer review journal publications, also disseminated results in other ways (e.g., Smith, 2008).

UL was implemented in many diverse ways, as anticipated when the projects were funded. Implementations of UL ranged from laboratory-based altruistic monetary gifts, to unselfish love within married couples, to maternal caring behaviors, non-normative acts of kindness, performing volunteer work, and consoling behaviors by chimpanzees (see Table 5). Most operationalizations of UL probed for benevolence that achieved extensity transcending an individual's self-interest or kin-interest. Even greater levels of extensity are possible – such as benevolence that transcends one's ethnic group or society. But among peer-reviewed journal articles, only Oliner (2005) probed for such expanded extensity, by systematically attending to benevolence that transcended boundaries of ethnicity (see Table 5, column for “limit transcended”). Eisenberg, Sallquist and colleagues (2009) also examined inter-religious friendships, but as a *predictor* of UL.

Interestingly, among non peer-reviewed publications, transcendence of ethnic and other supra-kinship group boundaries was somewhat more common. Such transcendence was a focus of books by Poloma, Wuthnow, and Cowart, an investigation of faith-based organizations (category VI). Each of these projects employed historical or qualitative methods, suggesting the value of these non-quantitative methods for detecting and probing more highly extensive forms of love. Transcendence of ethnic identities was also a focus of Wright and Aron's intervention-based study.

Still, very few projects can be unambiguously classed as investigations of the purest or most extensive form of UL, represented by the center of the conceptual target (Figure 1; analyses not reported). That is, few if any of the projects had *methods of measurement* that would have permitted detection of the presence in the study population of an individual who embodied love that was highly pure, extensive, and in other dimensions also approached unlimited (as discussed later, Poloma's study may offer a partial exception). Most project reports, in fact, may best be understood as investigations of a UL-related construct, such as prosociality or empathy, rather than pure UL. This is not unexpected, given the many obstacles to enrolling study participants who have a substantial probability of being exemplars or channels of UL in its purer forms. Attempts to precisely characterize the fullness/purity of UL-related variables in individual studies are complex and subject to much potential for debate. Table 5 therefore tabulates how UL was operationalized in each report, but does not seek to evaluate its degree of fidelity to the UL construct.

In the following subsections, we review each project's primary reports of findings about UL. In most cases, findings are cited to peer reviewed journals. In a few cases, some or all of the primary findings are systematically presented in books (projects by Cowart, Oliner, Poloma,

Wuthnow) or book chapters (Omoto, Smith, Wright & Aron). In addition, 3 projects are discussed based on their production of an unpublished dissertation (Emmons), technical report (Benson), or conference presentation (Fogel). The findings of one project (Loucks) are described on the basis of a personal communication of unpublished analyses. Table 6 displays highlights of substantial primary findings that appeared outside of peer-reviewed journals.

### ***I. Evolutionary Psychology***

Four IRUL-funded projects focused on evolutionary psychology. Two explored UL-related constructs among close evolutionary relatives (de Waal) or primitive human cultures (Boehm), while two others tested whether the behavior of modern humans corresponded with predictions from evolutionary theory (Richerson, Wilson).

de Waal's project investigated UL as empathy in chimpanzees. Much of the project's effort involved building a database of how chimpanzees behave in response to aggression within the chimpanzee group. Drawing on this database, one publication documented the correlates of "*consolation... in which an uninvolved [chimpanzee] bystander initiates friendly contact with a recent victim of aggression*" (Romero, Castellanos & de Waal, 2010, p. 12110, emphasis in original). Findings showed that consolation occurred more often between females and between individuals that were socially closer, which "followed predictions from an empathy-based explanation" (p. 12112) for consolation. Results from de Waal's database have also informed a variety of his other professional and trade publications (de Waal, 2007, 2008; de Waal, 2009).

Boehm's project, like de Waal's, contributed to building a database – in this case, a foundational anthropological data base indexing characteristics of hunter-gatherer societies that can be used to investigate the evolutionary emergence of UL, operationalized as altruism. To date, two refereed publications on altruism have resulted. In one refereed article, Boehm (2008b) examined patterns of purposive human decision-making among extant mobile hunter-gatherer societies globally (n=10). Over many generations, Boehm argued, the social support of altruism and punishment of selfish deviance could have caused differential rates of reproduction that selected in favor of genetic altruism and against genetic selfishness. The case is clearest for punishment-driven selection against selfishness, where Boehm's ethnographic sample indicated that most societies ( $\geq 70\%$ ) considered as morally deviant each of a wide range of selfish behaviors (e.g., murder, theft, adultery, bullying or beating, cheating or lying, and not sharing or cooperating). Boehm's sample societies also showed a universal tendency to approve altruism-related behaviors such as cooperation, generosity, general sharing, and "giving aid both to kin and to nonrelatives" (p. 337). In contrast to punishments for selfishness, the positive social sanctioning of these desirable qualities is "much less obvious, ethnographically speaking" (p. 338), and takes place "more at the individual level" (p. 337). However, it is the "band as a whole – as a tightly interconnected gossiping network" (p. 337), that arrives at assessments of people's personal reputations for generosity versus selfishness. Individuals are thus made socially attractive by adhering to prosocial ideals, becoming more desirable as partners for marriage, hunting, or trading. "For that reason," Boehm (2008b) concludes, "up to a point their altruistically generous genes can be favorably selected in spite of the individual fitness costs incurred" (p. 339).

In a second refereed article, Boehm (2004b) conducted a cross-species analysis to determine what is most economically distinctive about human beings. He concluded that in

comparison with the great apes, human economic distinctiveness resides in *communal* property that obliges sharing beyond immediate kin. A key result was to stabilize the nutritional intake of all individuals in environments where food is sporadically available in large quantities (e.g., from hunting large but rare game animals). The “critical evolutionary transformation” (p. 109) to reliance on obligatory whole-group sharing freed individuals from dependence on their immediate kin-group’s much more sporadic (i.e., feast or famine) success at food acquisition. As a result, humans thereby became differentiated from the great apes by their routine engagement in behaviors that forego immediate appetitive gratification in ways that benefit others beyond-one’s direct kin.

Wilson’s #1 project encompassed three distinct lines of investigation, one involving a laboratory experiment, another an evolutionary analysis of 35 randomly selected religious traditions, and the third a large survey. In pursuing these investigations, Wilson offered some novel perspectives on how to conceptualize altruism.

In his first line of investigation, Wilson studied how undergraduates (n=330) reacted to imaginary scenarios involving an “investment club” (p. 277, Eldakar, Wilson & O’Gorman, 2006). Scenarios involved either an opportunity to help a medically needy person or to punish a cheater. UL was operationalized as tendencies toward altruistic helping (to cover emergency medical costs) or altruistic punishment (paying to punish a cheating investment partner). Analyses focused on the effect of varying the nature of the focal individual, that is, the cheater or the unwell person. Findings showed that in comparison to a non-relative, a focal individual who was a genetic relative (a cousin) evoked a higher level of altruism-congruent action in both the helping scenario (e.g., more assistance in fundraising) and in the punishment scenario (e.g., more confrontation). Compared to non-relatives, participants had stronger emotional reactions to genetic relatives who cheated (e.g., more angry, betrayed, disgusted), but *not* to genetic relatives who were needy (e.g., equivalent levels of feeling concerned, empathetic, sad). Thus, participants in most cases showed greater UL (altruistic) tendencies toward relatives, consistent with evolutionary theory. The equivalent emotional responses to needy club members who were relatives versus non-relatives were “surprising” to the investigators (p. 280), and no explanations were attempted.

Wilson #1’s second effort analyzed the evolutionary implications of 35 religious traditions that were randomly selected from the *Encyclopedia of Religion* (Wilson, 2005). He examined whether the characteristics each tradition (e.g., altruism or otherworldliness) made it consistent or inconsistent with 5 major evolutionary theories for the origin of religion. Findings indicated that “portrayals of religion as primarily nonfunctional or individually selfish... can be rejected” (p. 404), that religion is not a parasitic cultural meme, and that “religions demonstrate that the parameters of cultural evolution have themselves evolved to enhance between-group selection and restrict within-group selection” (p. 405). Because most religious traditions endorse a version of UL, this suggests similar conclusions regarding the evolutionary origins of UL, or at least a major “proximate mechanism” (p. 405) for cultivating UL.

Wilson #1’s third line of investigation was reported in a chapter of Post’s *Altruism & Health* (Wilson & Csikszentmihalyi, 2007) (see also Table 7). The investigators examined predictors and correlates of the UL-related construct of prosociality among adolescents (grades 6-12) in data collected in the 1990s for the Sloan Study of Youth and Social Development (SSYSD). The SSYSD database includes numerous questionnaire self-report measures from over

1,000 focal students and 3,000 of their classmates.<sup>14,15</sup> To measure prosocial behavior, Wilson and his colleagues retrospectively constructed a scale from 17 of the SSYSD’s self-report questionnaire items (e.g., “How often do you spend time volunteering or performing community service outside of school?”, p. 316). Proceeding from an evolutionary perspective, the investigators attempted to characterize the “niche” of altruism, since generally “there is no single best strategy for all situations, [and] a mix of strategies will be maintained in the population.... Other-regarding behavioral strategies have coexisted with more self-regarding strategies throughout human history [so] both must be advantageous in some situations” (p. 315).

Findings showed that stressful events, such as teen pregnancy or being beaten up, were more likely to happen to individuals lower in prosociality. Conversely, several experience sampling measures of well-being (e.g., feeling happy, living up to one’s expectations) correlated positively with the prosociality scale. In general, these findings confirm that “*given the right conditions*, altruism can be very good for the altruist” (p. 330, emphasis in original). The conditions reflect the “niche” of altruism: “highly prosocial individuals tend to inhabit stable, nurturing environments that enable them to thrive as individuals and work toward long-term goals” (p. 317). Supporting this contention, almost 40% of the variance in prosociality was explained by measures of gender, social support, personal efficacy, long-term goals, and religious participation.

Outside of its primary “niche,” however, the investigators argue and offer evidence that altruism provides fewer advantages. Individuals higher in prosociality were generally more distressed by the occurrence of the aforementioned negative events when they did occur. The investigators also provide evidence that high-prosocial and low-prosocial groups are not homogeneous. Among participants in the lowest 30% of prosociality, a cluster conforming to a narcissistic profile measured higher than the population average on many salutary factors, including self-esteem. On the other hand, among highly prosocial participants, those in a highly religious cluster showed a generally “more robust picture of mental health” (p. 323), whereas those who were nonreligious scored worse than the sample average on some factors (e.g., “feels useless at times,” p. 324). The authors conclude their application of Darwinian theory by arguing that “Once we think of altruism as like a species, with a distribution and abundance, we can attempt to modify the environment to expand altruism’s niche,” with the suggestion that “religions appear to be especially effective at creating environmental conditions favorable for altruism, at least among their own members. Scientists interested in altruism have much to learn from religion... It will be interesting to see if the scientific study of altruism from an ecological perspective can expand altruism’s niche still further” (pp. 330-331).<sup>16</sup>

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<sup>14</sup>Wilson & Csikszentmihalyi’s (2007) chapter does not report exact sample sizes for most of its analyses or tables.

<sup>15</sup>In addition, the SSYSD collected experience-sampling (“beeper”-prompted) measures of a range of thoughts and feelings of focal individuals, assessed in vivo at various timepoints throughout their week.

<sup>16</sup>Examples of what might be learned from an ecological perspective include the following: While those who scored in the bottom 30% of the prosociality score distribution (low-PRO) were more likely to experience a stressful event (such as getting in a fight), those who scored in the upper 30% (high-PRO) experienced greater stress from such events. Secondly, a certain

Finally, Richerson’s complex three-study project used laboratory-based games to examine the relation between religiousness and the UL-related constructs of generosity, trust, and cooperation. He and his colleagues use evolutionary theory to argue that religiousness should lead to prosocial behavior primarily *within* religious settings, since “advertising prosocial behavior can make an individual a victim of exploiters” (p. 271, Paciotti et al., 2011). In the three studies, the investigators had pairs of strangers engage in the well-studied behavioral economics laboratory games of Dictator, Trust, and Public Goods. Each of these games involves choices in how to allocate a small amount of money (e.g., \$10) under various conditions of uncertainty, sometimes with the possibility that the money could be returned or augmented if other experimental subjects make favorable allocations. In the first study, Generosity was measured among undergraduates (n=75) by how much money the first player in the Dictator game donated to an anonymous second player. In the second study, Trust was measured among members of secular (n=72) and religious organizations (n=111), some of each group primed with the statement that their paired partner had “religious beliefs and a relationship with God” (p. 284). In this Trust game, money that is donated by the first player is doubled by the investigators, and the second player has a chance to return a portion of the money that he/she receives. In the third study, 51 separate groups of 5 undergraduates each played a 10-round game of Public Goods under various sets of conditions. Cooperation was measured by individual contributions to a public account, which was doubled by investigators at each round and then redistributed among the group of 5 participants.

Findings revealed associations between religiousness measures and prosocial virtues that were generally “weak” (p. 297) and inconsistent, although some statistically significant associations were found. More specifically, significant associations were found in the study that took place in an organizational context and that provided information about partner religiousness (study 2). Significant associations were observed between generosity or trust and several religious measures that included higher intrinsic (internalized) religiosity, lower extrinsic (means-to-an-end) religiosity, and believing the partner was religious. The investigators suggest that these results conform to priming theories that “people who have immediate access to their religious thoughts are more prosocial” (p. 298). However, they interpret their overall results as showing that “when playing with fellow students and fellow citizens, people from a diverse civil society use nonreligious norms and expectations to guide their play in the games” (p. 300). Thus, social contexts may affect the extent that religiousness fosters UL-related prosociality. Based on evolutionary theory, the investigators were “not surprised by these results” (p. 300).

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type of low-PRO, a narcissist, was distinguished from the typical low-PRO and scored not only higher than non-narcissistic low-PRO’s but also higher than the overall average in terms of multiple health factors, such as self-esteem, control, trust, and stress. Aside from self-esteem however, the mental health benefits of narcissism were not reflected in an assessment of day-to-day life. The authors theorize that altruism is healthy for the individual when in a supportive community of altruists, but in a lower prosocial environment an altruist will experience greater stress. The authors posit that the health effects of prosociality are further mediated by the way in which it is conceptualized by the individual, which is supported by their findings that highly religious high-PRO’s showed higher self-esteem, self-confidence, and faith in the future than highly non-religious high-PRO’s even in day-to-day experience.

## Summary / Questions

These four projects highlight the diverse ways that researchers in different fields have attempted to use evolutionary theory to gain insight about high-level human phenomena such as character strengths, virtues, spirituality, and religion. As UL is one of the most distinctively human phenomena, especially when highly extensive, pure, and intense, the challenges in using evolutionary perspectives to study UL, as opposed to a UL-related construct, are particularly formidable. A clear and empirically well-supported picture of the evolutionary emergence of higher forms of love would seem to require much inter-disciplinary bridge-building between biologists, sociologists, humanists, philosophers, and theologians – tasks that are in many cases still in their infancy (e.g., see discussion in Wilson, 2009). The research projects described here did not seek to build grand syntheses across all these fields. But these projects do suggest a variety of questions for further investigation, such as

- Can any features of the human brain be attributed to the evolution of obligatory whole-group sharing, identified by Boehm (2004b, p. 109) as the most “economically distinctive” human trait?
- Can one identify a range of sociocultural “niches for altruism” that support different levels of extensity, intensity, purity, and other dimensions of love?
- Can further insight about the evolution of UL come by combining the insights of Boehm and/or Wilson with ideas about the evolutionary role of spiritual and contemplative practices offered by theorists such as Rossano (2007) or Stewart (2007)?

## II. Biological Mechanisms

Three projects investigated the biological processes that foster UL or the sequelae of UL. One project investigated hormonal mediators in voles, while two projects investigated neural mediators in human mothers and other adults.

Carter’s animal-focused project sought to understand the physiological correlates of UL, operationalized as mammalian nurturing behavior. While females in most species show nurturing behavior to their own young, such behavior is less common among males, especially reproductively naïve males. Carter’s project studied reproductively naïve (virgin) prairie voles, who exhibit an unusually large degree of degree of alloparenting, that is, the nurturing of other voles’ pups. Because of this unusual extensity of nurturance in comparison to other species, Carter conceptualized vole alloparenting as an operationalization of UL.

One of Carter’s major findings was that two hormones, oxytocin (OT) and arginine vasopressin (AVP), appear to mediate the expression of UL (operationalized as vole alloparenting). This was her conclusion after randomizing 80 virgin male voles to 10 conditions in which one or both hormones were either elevated, weakly suppressed, or strongly suppressed, through injection of the hormones or hormone antagonists. Vole alloparenting behaviors were significantly reduced *only* when OT and AVP were simultaneously strongly suppressed through injections of antagonists. Thus, “when receptors for either OT or AVP [alone] were blocked, the effects of the alternative peptide or other related systems might have been sufficient [... but] If both the OT and AVP systems were inactivated by receptor antagonists, then animals might have had difficulty in overcoming the fear or anxiety associated with pup stimuli” (p. 359, Bales, Kim,

Lewis-Reese & Carter, 2004). In this context, therefore, OT and AVP were redundant to each other in mediating UL.

Hormonal mediation of UL-related behaviors was also given major attention by Carter in a second refereed article, a review. The investigators concluded that a substantial body of work now argues that “during critical periods in development, social experiences or manipulations of OT or AVP may influence the expression of these same peptides, or their receptors, with life-long behavioral consequences” on such UL-related behaviors as alloparenting, parenting, and pair-bonding (p. 339, Carter, Boone, Pournajafi-Nazarloo & Bales, 2009).

A final report by Carter’s team investigated virgin male and female voles, aged 60 days, who were exposed to 2-3 day old pups. More responded in a parental fashion (n=16), than in a non-parental fashion (i.e., biting the pup, n=10). Over the next 2 days, the investigators measured neuronal growth in the hippocampus, an area associated with learning and memory. The unanticipated finding was that the voles that acted parentally (the behavior closer to UL) experienced comparatively *less* post-exposure neuronal growth. This difference was found in one out of the four studied hippocampal regions, the dentate gyrus (DG,  $p < .05$ , unadjusted for multiple tests). The authors suggested that “consolidation of a parental experience may require neurogenesis and a unique, but not necessarily greater... addition of more neurons [relative to non-parental conditions]” (p. 14, Ruscio et al., 2008).

Leckman and Swain’s project investigated UL among human beings, operationalized primarily as mothers’ loving feelings and behaviors toward their infants. Their findings suggested that UL in human beings is transmitted in part through mammalian biological processes (i.e., vaginal delivery, breastfeeding, high maternal care during childhood). Of their three UL-related empirical reports, two examined predictors of strong UL-related maternal feelings. One study by Swain, Tasgin and colleagues (2008) used fMRI to measure brain activation among 6 mothers who gave birth by vaginal delivery (VD), and 6 others who gave birth by elective Cesarean Section Delivery (CSD). Two to four weeks post-partum, these mothers showed no significant group difference in self-ratings of emotional response to hearing tape recordings of their own baby’s cries. However, as measured by fMRI, the VD group showed significantly stronger brain activation in numerous brain regions associated with parenting, attachment, motivation, and reward, as well as with neurohormonal regulation.<sup>17</sup> CSD mothers showed stronger activation in only one region, the insula, the anterior portion of which is associated with pain processing. The investigators suggested that such differences “may reflect the effects of vaginal delivery... and related biobehavioral events that may contribute to mental health risks and resiliency in the mother–infant dyad” (p. 1045).

A second study by Leckman and Swain’s team investigated how breastfeeding predicted brain activation and maternal sensitivity among new mothers (Kim et al., 2011). Differences were measured between mothers who chose to breastfed exclusively (n=9) and those who formula-fed exclusively (n=8), and findings reflect adjustments for maternal education but not personality variables. While listening to their own baby-cry at 2-4 weeks postpartum, breastfeeding mothers showed significantly greater activation of several brain regions important

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<sup>17</sup>Brain regions showing differential activation included “superior and middle temporal gyri, superior frontal gyrus, medial fusiform gyrus, superior parietal lobe, as well as regions of the caudate, thalamus, hypothalamus, amygdala and pons” (p. 1042, Swain et al., 2008).

for caregiving behaviors and empathy (these included the superior frontal gyrus, insula, precuneus, striatum, and amygdala), as compared to formula-feeding mothers. Breastfeeding mothers also showed comparatively greater maternal sensitivity at 3–4 months postpartum, as measured from videotapes of mother/infant interactions ( $p=.05$ ). Finally, for both breastfeeding and formula feeding mothers, greater activations in two of these regions (right superior frontal gyrus and amygdala) were associated with higher maternal sensitivity at 3–4 months. The investigators acknowledge that these associations could arise from unmeasured pre-existing personal, cultural, or socioeconomic differences between mothers who choose breastfeeding versus formula feeding. They also suggest the biological plausibility that breastfeeding, mediated by hormones and brain activation, may causally affect maternal sensitivity and caregiving. Regardless of the underlying causality, these findings suggest the existence of positive links between breastfeeding, specific forms of brain activation, and UL operationalized as sensitive maternal caregiving.

A third study by Kim, Leckman, Mayes, Newman et al (2010) probed the consequences of UL, operationalized as high maternal care in childhood. A sample of mothers ( $n=26$ ) completed a self-report assessment of the level of caregiving and kindness they experienced as children from their own mothers. Compared to mothers who had received less care, those who had received more care showed more gray matter in several brain regions (superior and middle frontal gyri, orbital gyrus, superior temporal gyrus and fusiform gyrus), many of which appear to be important for understanding an infant’s emotional and physical states. All mothers’ brain activation when hearing their own babies’ cries was then measured by fMRI neuroimaging. Mothers who had themselves received more maternal care exhibited higher activations in several of these same brain regions (middle frontal gyrus, superior temporal gyrus and fusiform gyrus), whereas mothers reporting lower maternal care showed increased hippocampal activations. Such findings suggest that having received UL via maternal love fosters growth and activation of specific brain regions that in turn facilitate giving UL (as maternal love) to others.

In addition, Leckman’s and Swain’s project contributed four reviews that helped put these findings within the context of other ongoing research. One review examined the neural basis of parenting, especially by human mothers, identifying key brain areas employed in parental empathy, as well as numerous competencies needed for providing *adequate* parental love (Swain, Lorberbaum, Kose & Strathearn, 2007). A second review had a similar focus (Swain, 2011). A third review emphasized the neuroendocrine basis of parenting (Swain, Kim & Ho, 2011). A fourth broadly examined the special role of oxytocin in social motivation, including parental motivation (Gordon, Martin, Feldman & Leckman, 2011).

Preston’s project also investigated UL among human beings, operationalized as cognitive empathy, “a top-down process whereby the subject effortfully tries to represent the state of the object; also referred to as ‘putting oneself in the place of another’ or imaginatively projecting oneself into the situation of another” (p. 255, Preston et al., 2007). PET scans of 16 adult participants were obtained when they imagined 1) a personal experience, from their own past, of anger or fear; 2) a similar experience from another person, as if it were happening to them; and 3) an emotionally neutral experience from their own past. The degree to which participants could relate (i.e., empathize) with the other person’s experience was experimentally manipulated to be either high (Experiment 1) or low (Experiment 2). When participants could relate well to the other scenario, equivalent patterns of activation were produced in the two emotional conditions (self or other person). However, when the participant could *not* relate to the other person’s

scenario, relevant brain activation was significantly weaker than for the participant's own memory. Such findings are consistent with “all theories that propose that people activate their own emotion-producing substrates when observing the emotional state of another, including mirror neuron theories... perception-action theories... neural versions of simulation theory” (p. 272). The findings suggest that when people experience UL (operationalized in this project as empathy), they experience equivalent brain activation in response to events in their own and others' lives – experiencing not only love, but brain activation for “thy neighbor as thyself” (Lev 19:18).

### Summary / Questions

These three biologically oriented projects illustrate that the capacity and inclination towards UL is transmitted in part through evolved biological processes. These include hormonal processes (oxytocin and arginine vasopressin), maternal biology and behavior (vaginal delivery, breastfeeding, high maternal care during childhood), and the operation of key brain regions (e.g., amygdala). They also showed that activation of these evolved capacities can depend upon situational features, such as whether or not one individual can “relate” to another's experience. These findings suggest that on the level of a population, UL might be enhanced by interventions or policies that facilitate UL-supportive biological processes (e.g., breastfeeding) or perceptions (being able to “relate” to others' situations). Even if UL-supportive policies or interventions only produce modest gains for specific individuals, their impact on the population could be substantial (Rose, 1985).

Directions for further inquiry might include:

- What are the brain activation and hormonal profiles associated with saints or other individuals who are ‘virtuosi’ in love, that is, who channel particularly pure, intense, and extensive forms of love?
- Do individuals who enact exceptionally extensive forms of love conform to the patterns reported by Preston et al (2007)? For example, are they able to act lovingly even when their brain does not display the pattern of activation described by Preston?
- Do extensively loving people love widely because they can “relate” to many people's situations, or, alternatively, because they are able to love even those they have not understood well?

### ***III. Public Health & Medicine***

Three projects pertained closely to public health and medicine. Hierholzer and Ghafoori's project used clinical interviews and self-report instruments to cross-sectionally examine a convenience sample of 102 US combat veterans (ages 22 to 89, M = 56, SD = 7.06). About half (n=52) had post-traumatic stress disorder (PTSD) symptoms, as measured by a clinician-administered PTSD scale. UL was operationalized through measures tapping three facets of the experience of receiving love: recollection of parental nurturance; secure attachment style in close adult relationships; and secure attachment style with God. PTSD symptoms were unrelated to parental nurturance and God-attachment, but an overall secure attachment style to close others was associated with significantly lower PTSD symptoms (Ghafoori, Hierholzer, Howsepian & Boardman, 2008).

Loucks' project investigated the cross-sectional relation between altruism and risk of coronary heart disease (CHD). The study used 2005-2006 assessments of a subset of participants in the National Collaborative Perinatal Project (NCP), aged 37-43 years in 1999 (n=111 male, n=157 female) (Loucks, 2012, July 24, personal communication personal communication #10393 personal communication #10393). The project has not yet produced publications (its IRUL funding was solely for data-gathering). UL was operationalized as a 20-item measure of 10 "ways" of love (gratitude, attentiveness, compassion, helpfulness, loyalty, respect, creativity, humor, courage, and forgiveness) across 4 social contexts (family, friends, neighbors, humanity). A sample item was "If a neighbor or co-worker needs help, I offer it" (coded on a 6-point scale). Risk of CHD was measured as the Framingham risk score, based on total and HDL cholesterol, systolic and diastolic blood pressure, smoking, diabetes, age and sex. Preliminary findings show a marginally significant association between higher UL and a lowered risk of CHD among females ( $p=0.054$ ), but not among males ( $p=0.49$ ), even after adjusting for race/ethnicity, income and parental socioeconomic status (SES). These relations became nonsignificant after further adjustments for health factors, including current medications and depression, suggesting that these additional health facets may causally mediate the observed UL/CHD association.

Levine's project tested whether UL, operationalized as distant healing intention (DHI), could affect human physiology, as measured by skin conductance level (SCL) (Radin et al., 2008). Going beyond previous studies of DHI, her experiment combined "the powerful, real-life motivations associated with clinical trials of DHI... with the controlled context and objective measures offered by laboratory protocols" (p. 236, Radin et al., 2008). Levine's team recruited 36 dyads with long-standing interpersonal relationships, including pairs of friends, long-term partners, married couples, and mother-child pairs. In 22 dyads, one participant was a cancer patient, and all of the 50 other participants were healthy. Each of the 22 half-afflicted and 14 unafflicted dyads were divided into a sender and receiver of DHI, and all patients were receivers. Dyads including patients were expected to be especially motivated to transmit healing intentions. During 30 minute laboratory sessions, each sender and receiver were physically isolated and shielded from each other. Senders were instructed to transmit DHI during two to three dozen randomly selected 10-second intervals. Statistical analyses showed that receivers' SCL increased significantly during DHI transmission periods, far beyond what could be plausibly explained by chance alone ( $z=3.9$ ,  $p=.00009$ ). However, the overall 10-second pre-to-post SCL increase did not differ significantly between the healthy dyads and the dyads that included patients ( $p=.46$ ). Nor, among the 22 dyads involving patients, did increases differ among a randomly assigned subset of 12 dyads in which the healthy partners had received a meditation-based training in compassionate intention. Although they do not clarify underlying mechanisms or means of enhancement, these findings offer unambiguous support for the proposition that UL intentions can produce physiological effects at a distance – supporting the existence of what Levin (2003) called "nonlocal" pathways by which spirituality may causally affect health.

### Summary / Questions

Findings from these three projects support the proposition that receiving UL can affect health through multiple pathways, including health behaviors, secure and loving relationships with other people, and perhaps also distant healing intention. Health benefits from receiving UL are consistent with longstanding mainstream biopsychosocial models of health (Engel, 1977); emerging evidence also supports the proposition that in many circumstances, *giving* UL can also foster health (Post, 2007a). Levine's study was exceptional in providing evidence that distant

healing intention is able to produce measurable physiological changes unmediated by ordinary sensory channels. Although not documented in this study, such distantly-instigated changes could plausibly translate into improved mental and physical health, perhaps especially in situations where opportunities for more proximate communication of love is not possible (e.g., sustained geographical separation). Furthermore, findings of measurable effects from distant intention suggest that the healing effects produced by high-UL individuals (including healings associated with saints and sages of all religious traditions) could in many cases operate in part through such effects, and thus be irreducible to standard psychophysical mediating factors.

Recently, Post (2013) has offered a helpful theological interpretation of UL-related processes as core mediators of religion/health relationships. Post argues that religion is most salutary when it supports what he calls an “Ontological Generality” that enacts “a *communitas* of mutual love between God, self, and other” (p. 202). Ontological Generality offers a theoretical perspective that will help guide further inquiry in this area – for example, future investigations would do well to include measures of all of the constructs identified in Post’s framework, and explore their relations in light of Post’s interpretations. Related questions meriting further exploration include:

- Under what conditions do measures of love of others and of love of a higher power synergize with each other to foster health benefits? For example, Oman (2007) identified multiple population-based epidemiologic studies showing that volunteer work and attendance at religious services synergistically support longevity – that is, the benefits of doing both were significantly greater than the sum of the benefits of doing either alone.
- Evidence indicates that UL can be enhanced by interventions (e.g., Davies, Wright & Aron, 2011 – see Wright and Aron project findings, below; Oman, Thoresen & Hedberg, 2010). Do the resulting UL increases lead to improved mental and physical health?

#### ***IV. Development: Child & Adolescent***

Nine projects, the most in any single category, focused on the pre-adult development of UL, mostly focusing upon adolescents (Benson, Eisenberg et al, Reimer, Schwartz, Smetana #1, Smetana #2, Wilson #2), but some attention was also given to infants and toddlers (Fogel), and middle childhood (Spencer). Of the seven adolescent-focused projects, all but one operationalized UL as prosocial behavior or civic engagement. Additional operationalizations included moral development and empathy. We begin by describing the six projects that operationalized UL as adolescent prosocial behavior or civic engagement.

Wilson’s #2 study examined UL as prosociality within 1551 students (grades 6-12) in a single city, Binghamton, New York (Wilson, O'Brien & Sesma, 2009). The investigators used self-report questionnaires to measure each participant’s perceptions of his/her own prosociality, and 6 dimensions of perceived social support (general, and from family, school, religion, neighborhood, extracurriculars). Taking advantage of participants’ mutual and geographical proximity, the investigators constructed a higher-level variable for a neighborhood’s supportiveness quality by averaging perceptions of all participants who resided in that neighborhood. The objective validity of this measure was validated using a lost-letter measure of

whether people walking through a neighborhood are “willing to perform a small act of kindness”<sup>18</sup> (p. 193, Wilson et al., 2009) (Milgram, Mann & Harter, 1965). As expected, findings showed that self-reported prosociality was strongly related to total social support received ( $r=.723$ ). Furthermore, except for general and family support (which were highly collinear), multiple regression analyses revealed that each social support source predicted individual prosociality *independently* of all other sources. Averaged neighborhood supportiveness quality also predicted prosociality independently of the 6 individually reported sources of support. “Evidently,” the investigators wrote, “it really does take a village to raise a highly prosocial child” (p. 197). In contrast, neighborhood median income did *not* independently predict prosociality, and elsewhere income has shown negative correlations with tendencies to initiate cooperation. From the perspective of these measures, one might expect “the most prosocial students to live in neighborhoods that are high in quality and low in median income” (p. 197). Noting that “prosociality is such an important theme in human life that it is considered by all branches of the basic and applied human sciences” (p. 196), the investigators went on to discuss their empirical findings from three theoretical perspectives: social capital, experimental economics, evolutionary theory (this project is thus also relevant to Group I, above).

Eisenberg’s project examined UL in non-Western samples of adolescents. UL was studied as empathy and prosocial behavior among 1254 Indonesian youths, primarily Muslim (n=959) or Christian (n=289), with mean age of 13 years. Empathy was assessed by self-report. Prosocial behavior was assessed from self-report, parent-report, and teacher-report. More than a quarter of youths (n=358) were from religious or ethnic minority groups. Among these minority group youths, findings showed that a close friendship with a majority-group youth was associated with higher prosocial behavior and empathy, even after controlling for initial peer and socioeconomic status. Such findings are “consistent with the [existence] of socially relevant consequences for minorities of having a cross-group friend... [which] might open social opportunities [and] provide opportunities to develop social skills that are normative” (p. 257, Eisenberg et al., 2009). Cross-sectionally at baseline, prosocial behavior was also significantly associated with religiousness among the 183 Muslims for whom it was assessed (French, Eisenberg, Vaughan, Purwono & Suryanti, 2008). Greater Muslim religiousness also predicted future prosocial behavior, although much of this relation was explained by the earlier cross-sectional relation. “These associations... support (but do not prove) the notion that religious institutions foster other-oriented responding” (Sallquist, Eisenberg, French, Purwono & Suryanti, 2010, p. 711). However, marginal support was also found for a causal-direction-reversed effect in which earlier prosocial responding predicted later religiousness suggesting that “the relation is likely bidirectional, and other social and psychological processes... must be identified” (p. 713). (The project also produced a review chapter by Eisenberg & Eggum, 2008.)

Schwartz’s project examined helping behaviors and orientation among confirmed Presbyterian teens (n=457, mean age 15.6 years, 56% female) (Schwartz, Keyl, Marcum & Bode, 2009). Self-report questionnaires measured teen engagement in the four dimensions of helping behavior: family helping, general helping, giving/receiving emotional support with

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<sup>18</sup>More specifically, the lost-letter measure is a dichotomous yes/no measure of whether the people walking through a neighborhood choose to perform “a small act of kindness” (p. 193, Wilson et al., 2009) by putting into the mail a pre-addressed stamped envelope that has been (purposefully) left on the sidewalk by the researchers.

others in the congregation, and helping orientation (e.g., “enjoy doing this for others”). Cross-sectional relations were examined separately for males and females with factors that theoretically might foster helping behavior (e.g., religious practices), and as well as outcomes that might flow from helping. Concerning predictors, regression analyses showed that one or more helping dimensions correlated positively with age, sports/exercise, and positive religious coping. Perhaps surprisingly, negative cross-sectional relations were also observed: Multiple regressions indicated that more church attendance predicted giving *less* congregational support (both genders), and more prayer activities predicted *less* general helping (females). Each of these multiple regressions also adjusted for positive religious coping. However, effects on helping behavior from these two variables – prayer and worship service attendance – could plausibly be *mediated* by the aforementioned adjustment variable, positive religious coping, casting doubt on whether the observed negative relations represent causal effects. Unfortunately, the report did not allow determination of whether the *total* effects of these variables – arguably a better estimate of their total causal effect – would also be negative.

Regarding outcomes from helping behavior, most of Schwartz’s UL dimensions did not significantly correlate with measures of physical and mental health. An exception is that among females, more family helping behavior predicted better physical health ( $p=.002$ ). However, these UL dimensions did correlate significantly with numerous non-clinical well-being measures that included purpose in life, positive relations with others, and self-acceptance.

Benson’s project did not publish a refereed journal article, but it did produce a 43-page report that examined UL (in the form of prosociality) as a predictor of health among middle-school and high school students (Sesma & Benson, 2005). The investigators operationalized UL as regard for others (RfO), measured as both a disposition (RfO-D, 8 items, e.g., “helping to make the world a better place in which to live”) and an action (RfO-A, 2 items, e.g., number of hours spent helping friends or neighbors), using a factor structure derived from a non-representative though very large US national dataset ( $N=217,277$ ). As a disposition, regard for others was significantly negatively correlated with risk behaviors ( $r=-.29$ ), delinquency ( $r=-.34$ ), and, to a much smaller extent, with various other mental health indices. However, correlations were near to zero between mental health indices and the action component of regard for others. Furthermore, in a one-year longitudinal sample ( $N=931$ ), while other-regard disposition scores related to mental health in patterns generally consistent with hypothesized salutary value of other-regard, other-regard actions did *not*, and were in some cases correlated with *poorer* mental health a year later ( $r>.10$ ). The investigators called for more research, and questioned whether results could be confounded by the common practice of courts, schools, and other agencies assigning higher-risk youths to service-learning as a presumed antidote for risky behavior.

Smetana’s #1 project investigated civic engagement by a cohort of middle-class African American adolescents followed from middle to late adolescence ( $n=73$ ) (Smetana & Metzger, 2005). At the first timepoint (mean age 15.0 years,  $SD\approx 1.3$ <sup>19</sup>), adolescents’ interactions with their mothers were videotaped and rated for maternal warmth as well as adolescent receptiveness. At the final timepoint (mean age 18.4), the adolescents’ and their parents’ UL was

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<sup>19</sup>The report by Smetana and Metzger (2005) does not provide an SD for the 73 adolescents at Time 1, which represents those remaining after attrition from a larger sample ( $N=85$ ) who they report as having had a mean age of 15.05 and SD of 1.28. They report that at Time 2, the remaining participants ( $N=73$ ) had mean age 18.43, with SD of 1.39.

measured by self-report, operationalized as both current and intended future civic engagement with community, with church, or with politics. Self-reported measures of adolescent spirituality were collected at both timepoints. As expected, findings showed generally positive patterns of association of late adolescent civic engagement with adolescent spirituality/religiosity (both prior and current), and with mothers' current civic engagement. Maternal communication with mid-adolescents also strongly predicted late adolescents' intentions of future civic engagement. Unexpectedly, however, greater mid-adolescent receptivity to their mothers was associated with *less* late-adolescent civic engagement, as was greater maternal warmth to mid-adolescents. The investigators did not discuss or report tests of whether findings could have been confounded by age (e.g., that younger mid-adolescents could have elicited greater warmth while not yet having become as civically engaged).

Reimer's project examined the relation between two UL-related constructs, moral identity and volunteering among urban high school students (Reimer, DeWitt Goudelock & Walker, 2009). Reimer's team used a large survey (n=1550, mean age 15.8 years) to clarify for this population the components of moral identity (5 factors) and volunteering (4 factors). As expected, the investigators found that older youths self-reported higher levels of most moral identity factors. Furthermore, a dominant "caring-dependable" moral identity factor — encompassing caring, trustworthiness, loyalty, and dependability — predicted all four dimensions of volunteering: frequency of volunteering, as well as civic, religious, and utilitarian motives for volunteering.

In a second urban high school sample, Reimer's team used qualitative interviews to examine self-understanding of 30 youths (mean age 15.7 years), including 15 nominated as moral exemplars, plus a matched comparison group. They used the technique of "latent semantic analysis" (LSA, Landauer & Dumais, 1997) to compare relations within each group between actions, goals, and positive self-evaluation. As expected, the exemplars showed a closer alignment between goals and actions (e.g., they more closely "walked" their "talk").

Smetana's #2 project operationalized UL as concern for others in the context of adolescent moral development within the family. Her team investigated hypothetical dilemmas that involved a choice between helping a family member versus satisfying a personal desire. She studied responses to such dilemmas among 118 predominantly European American families, each with a child who was either an early adolescent or a middle adolescent (n=57 and n=61, mean ages 12 and 15 years, respectively). Semi-structured interviews elicited reasoning used by the teen and by one parent in evaluating 4 dilemmas. Each individual evaluated dilemmas faced by a person of their same social role (teens about other teens, or parents about other parents) as well as about the complementary role (teens about parents, or vice-versa). The fictional dilemmas involved conflicts between individual freedom versus role-related responsibilities to help. Findings showed that when reasoning about whether or not a fictitious character who occupied a respondent's *same* social role should engage in helping, "adolescents and parents both focused on concern for others more than any other reason," such as role responsibilities, conventionality, fairness, or pragmatism (p. 291, Smetana et al., 2009). In contrast, *role-responsibility* reasoning was comparatively more common when justifying the obligation to help of a hypothetical actor occupying the complementary social status.

The researchers noted that thinking about one's own obligations in relational ways may describe behavior "in a more volitional and therefore flattering light [whereas] when thinking about others' obligations, it may have been easier to see the responsibilities and duties inherent

in the role” (p. 291). Modes of reasoning also varied in several other ways as a function of the adolescent’s age as well as the level (importance) of the hypothetical need. Importantly, in contrast to media stereotypes of selfishness in American youth, the adolescents studied here “viewed teens as relatively obligated to help their parents, even when their needs were minimal [the low-need condition]... based on concern for others... and role responsibilities” (p. 289). In sum, for adolescents as well as their parents, both duty and UL (in the form of concern for others) was an important element in their moral reasoning.

Younger, pre-adolescent age groups were the focus of Spencer’s project, a study of childhood mental health, distress, resiliency, and protective factors. It focused on middle childhood, operationalizing UL as family helping behavior among urban school children, primarily African-American (41%) or Hispanic (39%), in grades 4 to 8 (N=699, mean age 10.4 years, Spencer, Fegley & Dupree, 2006). Helping behavior was analyzed as a potential protective factor. Among older children in grades 6-8 (n=495), UL correlations were small and nonsignificant with both emotional ( $r=-.04$ ) and physical ( $r=-.01$ ) distress. Among younger children in grades 4 and 5 (n=204), UL did not correlate significantly with emotional distress, but a small but statistically significant *positive* correlation ( $r=.20$ ) was found between more helping and greater physical distress (e.g., “how often do you have a stomach-ache?”; “how often do you have bad pain?”). These pilot analyses did not adjust for measures of income or other indicators of family need that could potentially confound the relation between childhood helping and distress.

Finally, Fogel’s project focused on infants and toddlers. His team examined how the quality of the mother-child relationship is related to emotion regulation at 1, 2, 3, and 5 years, and to empathy at age 5, both of which were theorized as central for developing the capacity for UL (Post, 2007b). The project has not yet produced published findings, although Fogel reports that project data are being used in a doctoral dissertation (Sarah A. Stone). Preliminary findings have been presented at a meeting (Fogel, 2012, May 14). The project involved gathering data on mother/child dyads (N=47). Mothers were primarily white and ranged in age from 19 to 43 years. Children were almost equally divided between boys (n=24) and girls (n=23). The quality of the child’s attachment to the mother was assessed at age 1, 2, 3, and 5 years. Child empathy was measured at age 5 through interactive interviews and observation of a mother/child interaction. Mother-reports of child emotional self-awareness and prosocial behaviors were gathered at ages 2, 3, and 5. Results indicated that 1) Girls showed more prosocial behavior at age 5, but there were no gender differences in empathy; 2) Secure attachment was stable over time and predicted both empathy and prosocial behavior at age 5; and 3) Self-awareness at age 2 predicted both empathy and prosocial behavior at age 5 (Fogel, 2012, May 14; Institute for Research on Unlimited Love & Fetzer Institute, 2004).

### Summary / Questions

These 9 projects provided a rich set of findings on UL among the young, particularly with regard to prosocial behavior and civic engagement among adolescents. These UL-related constructs were predicted by factors that included age, good maternal communication, friendship with a minority, social support from multiple sources, a good quality neighborhood, spirituality, religiousness, positive religious coping, and schemas connecting goals with action. UL-related constructs in turn predicted outcomes of interest that included increased positive social relations and purpose in life, decreased risk behaviors and delinquency, and various other constructs

related conceptually to UL (see Table 5). Findings also showed that among toddlers, attachment and self-awareness predicted empathy and prosociality; that among elementary school children, greater family helping predicted greater distress among younger children and girls; and that among teenagers, concern for others was an important part of normative moral reasoning and development.

Importantly, civic engagement and prosociality are topics of long-standing research interest, and a variety of published reviews are available on prosociality in general (Mikulincer & Shaver, 2010; Penner, Dovidio, Piliavin & Schroeder, 2005) as well as adolescent civic engagement in particular (Bermudez, 2012; Sherrod, Torney-Purta & Flanagan, 2010). Only seldom, however, do these large literatures address how prosociality or civic engagement are related to other, purer or more intensive or extensive forms of UL (as a partial exception, see Fehr, 2010). Similar patterns and caveats hold with regard to research on development of empathy and moral reasoning (e.g., de Waal, 2008; Eisenberg, 2000; Iacoboni, 2009; Tangney, Stuewig & Mashek, 2007). A key research task in this area, as in many subareas of UL research, is therefore to sharpen the research focus on what is distinctive about UL, as opposed to well-studied constructs that are related to UL. Such sharpening is most commonly done through developing improved measures. Further UL-focused work in these areas might therefore seek to address:

- How can UL be measured more precisely among children and adolescents, in ways that allow it to be differentiated from UL-related constructs such as civic engagement and empathy? For example, for potential manifestations of other-regarding love among children, how might one measure each of Sorokin's 5 dimensions of intensity, especially intensity, extensity, purity, and duration?
- Can very young children experience UL (as defined in various ways)? At what age does the capacity for UL tend to emerge, and how is it related to the emergence of UL-related characteristics such as civic engagement?
- Through what pathways does religious engagement affect the developmental emergence of UL or near-UL? Does this differ from how religion affects well-studied constructs that are related to UL, such as empathy and prosociality?

#### ***V. Development: Adult & Late Adult***

Five projects examined adult development. Two focused especially on younger and college-age adults (Emmons, Exline), and two focused on older or retired adults (Wink and Dillon, Omoto). These four projects each operationalized UL as particular aspects of altruistic behavior. The fifth project focused on enduring marriages (Jeffries).

Findings from Emmons' project were reported in a doctoral dissertation. UL was operationalized as organ donation, "the ultimate gift that one person can give to another" (p. ii, Greiner, 2004). Among undergraduates (N=160), hypothetical willingness to donate a kidney (when alive) to a relative was independently predicted by greater dispositional gratitude, but not by empathy or by knowledge about organ donation. In contrast, willingness to donate after death was independently predicted by empathy, but not gratitude or knowledge (Greiner, 2004, Table 3, p. 47). In another undergraduate sample (N=182), gratitude and generativity independently predicted positive attitudes toward organ donation. However, a randomized journaling

intervention to promote gratitude among undergraduates (N=83) did not significantly increase willingness to sign an organ donor card (Greiner, 2004).

Exline's project investigated UL as acts of kindness and generosity, producing three published reports, primarily based on samples of undergraduates, supplemented with one sample of community dwelling adults (N=197, mean age 36 years). In one report, Exline, Lisan, and Lisan (2012) operationalized UL in two complementary ways, as both giving and receiving. They investigated the emotional and behavioral effects of asking undergraduate participants to recall UL – an act of kindness – received from another person. Findings showed that the most common response was feeling grateful and loved; also common was amazement, which was more likely when the kindness was received in a close relationship or was viewed as unearned. And, although the average was low, some participants felt negative emotions (shame/weakness or mistrust), which were more commonly experienced when recalling non-normative kindnesses (kindness outside social norms for the relational context). In response to the recollected kindnesses, participants were on average highly motivated to give kindness to benefactors or to close others. They also experienced moderate motivation to act kindly to strangers (M=5.7/10) and some motivation (M=3.7/10) to act kindly to enemies, each more likely for participants who had experienced a non-normative act of kindness. Finally, a laboratory experiment yielded a somewhat contradictory result: compared to participants who recalled non-normative acts of kindness, those who recalled normative acts of kindness gave more money to charity, a difference mediated by the more positive emotional tone of their recollections.

Two additional reports by Exline focused on the relation between UL and the character strength of humility. When participants reflected on receiving UL, participants who were more humble reported more positive emotional responses (gratitude and feeling love) and less negative emotional responses (shame, mistrust). The predictiveness of humility for positive emotional responding could not be explained by other individual-difference factors, such as gender, personality, religiosity, self-esteem, sense of entitlement, gratitude, or socially desirable responding (Exline, 2012). Conversely, undergraduates (n=503) and adults (n=197, mean age 36 years) who were more humble were also more motivated to be kind to others of all types (ranging from benefactors to enemies), and were more likely to behave generously by mailing back an extra survey, as well as by donating to a charity or an anonymous future study participant. The predictiveness of humility for generosity, as for positive emotional responding, could not be explained by other individual difference factors (Exline & Hill, 2012).

Jeffries' project studied UL as love in the context of marital relationships. Marital and other intimate relationships represent a rich but challenging setting for studying UL.<sup>20</sup> On the one hand, they are a setting in which UL appears to occur fairly commonly, often with comparatively high intensity, rendering it comparatively more amenable to study. On the other

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<sup>20</sup>Within religious traditions, romantic love has been recognized as an exceptionally potent metaphor, and tool for cultivating intense love for God. Romantic love as a metaphor for exemplary divine love has been used by many Western mystics (Underhill, 1911), as well as in the bible (Song of Songs). In the *bhakti* tradition in Hinduism, aspirants cultivate an attitude toward God that corresponds to one of several primary human relationships (child, servant, friend, parent, lover). It is recognized that in the *madhura bhāva*, the romantic attitude, “all the elements of love – admiration, service, comradeship, communion – are present” (pp. 329-330, Prabhavananda, 1963/1979).

hand, intimate partnerships also frequently contain motivations that reflect greater self-orientation, such as sexual attraction and attachment. UL may dynamically interact with these other motivations in complex ways, and it may be difficult to separate out the effects of different types of love. Consistent with the richness of the topic, Jeffries' project produced both theoretical and empirical papers.

Jeffries (2002) presented a theory of the contribution to marriage of “virtuous love,” understood as “the dimension of love that entails the intention to benefit the other” (p. 45). The virtuous love construct appears to correspond comparatively strongly with Post's UL-2003 definition of UL. It encompasses the other-regarding nature of love as understood by Post (2002, p. 56) and Sorokin (1954/2002, p. 10), and implies high levels of several of Sorokin's (1954/2002) love dimensions. In addition, the dimension of *adequacy* is addressed through what Jeffries calls the virtue of prudence, or “careful consideration of the best means to achieve worthwhile ends for the other” (p. 46). Jeffries' paper is informed by theoretical perspectives from Thomas Aquinas' virtue ethics, and symbolic interactionism, as well as from Sorokin (1954/2002). In Jeffries' theory, virtuous love is viewed as complementary to “attractive love,” and these two components of love are viewed as dynamically interacting through several processes that help foster high-quality, high-stability marriages.

Jeffries (2006) applied this theoretical framework in a mixed quantitative / qualitative empirical study of 49 couples who had been married for 25 or more years. Here, the focal construct was called “benevolent love [which] refers to attitudes and behaviors intended to benefit the other” (p. 86). It was measured with a 5-item self-report scale that targeted other-regarding virtues (e.g., prudence, “thought over how you could contribute to their well-being,” p. 87). Manifesting benevolent love was, as hypothesized, positively correlated with various indicators of religious involvement ( $r=.34$  for importance of religious beliefs in marriage). Positive and significant correlations were also found between giving and receiving benevolent love ( $r=.56$ ), and between marital quality and both giving as well as receiving benevolent love ( $r=.40$ ,  $r=.73$ ). Findings from qualitative interviews added depth and supported the probable causal nature of these relations. Religiously active subjects drew upon religious frames of reference that made important contributions to imparting a sacred meaning to marriage, mandating commitment, defining the nature of love, and fostering certain modes of interaction, thereby contributing to overall quality and stability of marriage.

Wink and Dillon's project investigated older adults. They used longitudinal data to examine relations of spirituality and religion to generativity (concern for the welfare of future generations), a UL-related quality. Their conceptual framework was drawn from Wuthnow's (1998) distinction between a participant's “dwelling-” and “seeking-” oriented ways of approaching the sacred. Wink and Dillon designate these respective orientations as “religion” (more institutional) and “spirituality” (more individual and practice-oriented). Wink and Dillon analyzed data from close to 200 adults born in the 1920s in Berkeley, California, and followed through the late 1990s. Their reports showed that religion and spirituality both predicted facets of generativity (Dillon, Wink & Fay, 2003,  $n=183$ ; Wink & Dillon, 2003,  $n=181$ ; see also Dillon & Wink, 2007). Both also predicted facets of wisdom, a second UL-related quality (conceptually tied to Sorokin's “adequacy” dimension of love) that “helps, similar to generativity, to instill social trust and meaning in younger generations” (Wink & Dillon, 2003, p. 922). Furthermore, religion and spirituality were predictive across time: these measures in earlier adulthood both predicted late-life generativity and wisdom. Religiousness was generally more predictive of

facets of generativity corresponding to “participation in a mutual, interpersonal reality” (“communal” facets) whereas spirituality was more predictive of “engagement in creative and knowledge-building life tasks” (“agentic” facets) (Wink & Dillon, 2003, p. 922). These findings “should help dispel concern that spirituality necessarily implies indifference toward the welfare of others” (p. 441, Dillon et al., 2003) and suggest that perhaps “highly spiritual older adults may be seen as providing equally valuable role models for the people around them as do highly religious individuals” (p. 922, Wink & Dillon, 2003). The investigators argued that “it is the undisciplined, ad hoc, and idiosyncratic forms of spirituality – and not a practice-oriented spirituality – that tend to inform much of the scholarly discussion about the negative social implications of spiritual seeking” (Dillon et al., 2003, p. 440).

Finally, Omoto’s project also investigated older adults. His team studied factors contributing to volunteer work among older adults (n=228) involved with senior centers or residing in retirement communities in Southern California. Several findings were reported in a chapter by Omoto, Malsch, and Barraza (2008). They constructed a 4-item measure of perceptions that volunteer work is strongly linked to other-regarding love (e.g., “love motivates me to act on behalf of my community,” p. 265). This measure had good internal reliability ( $\alpha = .88$ ), predicted volunteering in both religious and nonreligious contexts, and was strongly correlated with other-focused motives for volunteering ( $r = .74$ ). Other-focused motivation for volunteering was also predicted by sense of community and empathic concern.

#### Summary / Questions

Findings from these projects revealed numerous roles played by UL, especially in the form of altruistic behaviors, in the lives of college-age, mature, and older adults. Support was found for several antecedents to UL, including humility, religion, and spirituality. Support was also found that UL as benevolent love within marriages fosters marital quality, and that receiving UL in the form of non-normative acts of kindness produced mixed results that ranged from gratitude to shame. Such mixed results from non-normative kindness would suggest that effects from violating norms must be taken into account when evaluating whether manifestations of love are high in Sorokin’s dimension of *adequacy*. Such an awareness of norms may perhaps be reflected in the injunction attributed to Saint Vincent de Paul that “It is only for your love alone that the poor will forgive you the bread you give to them” (quoted in Day, 1949).

Possible directions for future work on UL and adult development include:

- How do adults of different ages understand love? Do they engage in practices that attempt to self-regulate their capacity or tendency to engage in love that is high in intensity? In purity? In extensity? In duration? In adequacy?
- Do Wink and Dillon’s findings about differential correlates of spirituality and religion generalize to participants in other samples, cultures, ethnicity, or periods of birth?
- For couples with troubled marriages, which of the salutary processes or skills identified by Jeffries (2006) tend to be lacking, and how can those skills be acquired by religious or nonreligious couples?

## **VI. Faith-Based Communities**

Four projects examined love in the context of faith-based communities. Three examined social service activities led by faith-based communities or organizations – two as part of ongoing activities (Wuthnow, Poloma), and one in the crisis conditions following the September 11, 2001 terrorist attacks (Coward). The fourth project examined intergroup forgiveness and apology, activities in which faith-based communities have often exercised leadership (Oliner).

Wuthnow's project examined experiences of care recipients and motives of caregivers who operate through human service organizations, both faith-based and secular. His studies focused especially on the Lehigh Valley in Pennsylvania and used a mixture of qualitative and quantitative methods. Wuthnow's findings help clarify the role of UL, and of a faith-based setting, in the provision of human services – a topic of considerable interest in view of ongoing questions about the role of government funding of faith-based human services. For their first published report, Wuthnow, Hackett, and Hsu (2004) surveyed Lehigh Valley residents (n=2077) about their experiences of receiving various types of social or human services (e.g., medical, financial, legal, spiritual, emotional, food or shelter, etc.). Respondents were asked about the perceived trustworthiness and effectiveness of different organizations, including faith-based organizations (FBOs), nonsectarian service organizations (NSOs), government agencies, hospitals, and churches. Compared to NSOs, FBOs were hypothesized as “more likely... to be perceived as trustworthy because of such norms as honesty, compassion, altruism, and personalized care being associated with religious teachings” (p. 4). Findings instead showed few differences in perceived trustworthiness and effectiveness of NSOs and FBOs, after adjusting for client characteristics. One possible explanation is that the norm is for FBOs and NSOs to adopt similar professional styles of service delivery that are “largely indistinguishable” (p. 15). However, other findings showed that people who had sought assistance from religious *congregations* tended to have higher overall trust of caregivers, perhaps because of the distinctive norms and informal assistance provided by congregations. Such assistance “appears to reassure people that human nature is good and provides networks that fill the gaps left by assistance received from formal organizations.” (p. 14).

Wuthnow's (2004) book describes additional findings from qualitative interviews with both recipients and service providers (see also the dissertation by Walling, 2005). “Experiencing Unlimited Love?” is chapter 8 in Wuthnow (2004, pp. 256-285). It offers an extended analysis of how the concept of unlimited love applies to the activities of service organizations. Except for the distinctive congregational setting, professional caregivers and service providers tend to view “serving people who are in need [as] an act of kindness or compassion, which makes it something like love, even though love itself is not a common way of describing service activities” (p. 268). Recipients also seldom use the word “love,” and generally “do not focus deeply on the motives of caregivers,” although they “sometimes talk about their own moral qualities as a reason for being helped... [asserting] that they are good people, that they are honest, that they are hard-working, or that they deserve to be helped because of other morally desirable traits” (pp. 273-274). Wuthnow speculates that “the outcome may be the same we imagine when considering unconditional love in the context of childrearing... it is often the case that self-justifications become self-fulfilling prophecies... By evoking reasons why we deserve to be helped... caregiving can reinforce the value we attach to moral behavior” (pp. 274-275).

Poloma's project focused on the regularized but much less standardized mode of community social service provision performed by an emerging Pentecostal church based in

Atlanta (Poloma & Hood, 2008). The church was led by a strong charismatic leader who embraced a visionary mission of loving service to the poor and homeless. The church operated a shelter and training program for the Atlanta homeless, and sought to live as a “church family” (p. 48) – a vision widely appreciated, but embraced with more enthusiasm among the congregation than among the homeless. Poloma’s team investigated the dynamics of “godly love [defined] as the dynamic interaction between human responses to the operation of perceived divine love and the impact this experience has on personal lives, relationships with others, and emergent communities” (p. 4). Their analyses reject a “methodological atheism... [based on] an uncritical subscription to a social constructionism where nothing of experience is attributed to the object of experience” (p. 8). Instead, they pursue a “methodological agnosticism in which we use as real data the reported acts of God that informants assert they have experienced [and] explore how a defined reality is maintained within a community of people who attempt to live it out” (p. 8). Thus, perhaps more directly and explicitly than in any other first-wave project, Poloma and her team investigated attempts to enact love that was high in all of Sorokin’s dimensions, thereby more or less fully addressing the UL construct (Figure 1).

Drawing upon Sorokin’s (1954/2002) multidimensional conception of love, as well as Johnson’s (2001) threefold typology of love,<sup>21</sup> and Collins’ (2004) theory of interaction rituals, Poloma’s team employed ethnographic observation and collected rich in-depth qualitative interviews of both church members (n=52, p. 66) and homeless beneficiaries (n=49, p. 122). Quantitative surveys were also collected from both the church members (n=55, p. 66; see also p. 226) and the homeless beneficiaries (n=117, p. 67). Measured variables included 4-item scales for the UL-related constructs of altruistic behaviors (e.g., “I have given away things I needed to help the poor,”  $\alpha=.78$ ) and empathy (e.g., “Sometimes I find myself feeling deep distress over the unmet needs of the poor,”  $\alpha=.68$ ).

Unexpectedly, the church experienced a schism during the study period, leading to abandonment of some planned lines of investigation. Nevertheless, the extensive qualitative interviews provide a valuable portrait of an unusually idealistic organization, and suggested that caring forms of love may indeed be fostered and supported by various “charismata” – perceived gifts of the Holy Spirit (see p. 115) – such as glossolalia, healing, and prophecy. Similarly, the quantitative surveys showed significant and mutually independent cross-sectional relationships with empathy among various spiritual values (e.g., valuing “walking in the supernatural”) and experiences (e.g., of “charismata” such as having heard a divine call). Many spiritual variables showed cross-sectional relations with altruism that were independent from each other as well as from empathy, providing, in the investigators’ view, “limited [positive] support for Sorokin’s premised ‘love energy’” as well as Sorokin’s idea that “more perfect forms of love hypothetically can be explained by an inflow of love from higher sources” (p. 116). In particular, Poloma and Hood (2008) report that

Findings from [the study] offer limited support for Sorokin’s premised ‘love energy.’ Mystics who experience union-love with God were clearly more likely to report higher scores in care-love. This finding held true for both the family members and the homeless beneficiaries of their care-love.

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<sup>21</sup>Johnson (2001) argues for 3 fundamental types of love: care-love, union-love, and appreciation-love.

Cowart’s project focused on church-led community-based responses to the terrorist attacks of September 11, 2001. Cowart herself was a leader in these efforts, having coordinated many hundreds of volunteers at St. Paul’s Chapel in downtown Manhattan, directly adjacent to the World Trade Center, as they supported workers cleaning up the disaster site. Cowart collected over 100 hours of interviews with members of the Chapel community, many of whom worked twelve-hour shifts for many months (Cowart, 2004). She witnessed and documented innumerable examples of how people from all walks of life responded to the disaster with ongoing and heroic unselfish love, a particularly vivid and compelling exemplar of the “altruistic communities” that form in the aftermath of disasters (Jerusalem, Kaniasty, Lehman, Ritter & Turnbull, 1995, p. 120). Cowart’s interviews offer evidence of numerous facets of the power of love: its power to conquer fear, to bless, to create, to enlighten, to provide vision, to unite humanity, to inspire other-regarding action, and to experience a “mysterious extra,” a “metaphysical love in the form of felt accompaniment” by the divine in various forms (Cowart, 2004). Cowart’s (2008) book *American Awakening* offers a vivid narrative of the altruistic communities that emerged at St. Paul’s and four years later in Louisiana in response to Hurricane Katrina.

Finally, Oliner’s project focused on the UL-related qualities of compassion, forgiveness, and apology, with special attention to documenting exemplars of these qualities. The project described numerous individual exemplars, but was perhaps most distinctive in extensively documenting many cases of *intergroup* apology. Oliner and Zylicz (2008) list 44 cases of intergroup apologies, and offer 18 detailed case studies, ranging from community-based reconciliation procedures in Rwanda, to Pope John Paul II’s apology to Jews for millennia of persecution, to President Bill Clinton’s official apologies to African Americans for the Tuskegee Experiment. Oliner and Zylicz (2008) conclude that “apologies do not necessarily lead to forgiveness or reconciliation but have often helped to improve relations and initiate a process that *may* lead to forgiveness and reconciliation” (p. 117, emphasis in original). Oliner’s project also fielded surveys of moral exemplars, clergy, college students, and other individuals. Findings showed generally positive relations between many UL-related measures, such as forgiveness, agape love, concern for restorative justice, spirituality, and religiosity (Oliner, 2005; Oliner & Zylicz, 2008).

### Summary / Questions

These four projects showed some of the many ways that faith-based communities have exercised leadership in enacting UL to benefit the larger society. They suggest that people do not always experience faith-based organizations as conveying exceptionally high levels of love, and that faith-based organizations can experience a variety of obstacles that prevent them from implementing their high-UL ideals. Still, findings did suggest that faith communities can find support for practicing UL from their distinctive spiritual practices, and that congregations in particular are capable of enacting exceptionally high levels of UL, both in crises and on an ongoing basis. Questions for future research might include:

- Can Poloma and Hood’s (2008, p. 8) “methodological agnosticism” be applied more widely to characterize the ways that various faith communities or devout individuals experience the infusion of UL from divine sources? Can additional insight about congregations come from nonstandard methods, such as round robin designs (e.g., Meagher & Kenny, 2012)?

- How does participation in faith-based community service affect extensity and other dimensions of love experienced by an adherent?
- How is intergroup apology by group leaders perceived by ordinary members of the affected groups? How does it affect their conscious and unconscious images of their own and the other group, and how they approach interacting with members of the other group?

### **VII. Modern Society**

Three projects examined UL in modern society. Two involved samples that were representative of US adults (Smith, Brown), and the third examined US adult responses to the events of September 11, 2001 (Koopman and Butler).

Smith's project examined rates, trends, and correlates of empathy and altruism using data from the 2002 and 2004<sup>22</sup> General Social Survey (GSS), a nationally representative survey of US adults. The GSS has been conducted since 1972, and every 2 years since 1994. Raw GSS data is publicly available, and is widely used by many US social scientists and their students. Thus, including this rich set of UL-related variables in the 2002-2004 GSS facilitates not only future studies of national trends, but also the study of UL-related questions by a wider range of researchers and their students.

Extensive analyses of these data appeared in a chapter by Smith (2008). The UL-related measures were empathic concern (e.g., "I often have tender, concerned feelings for people less fortunate than me," 7 items), altruistic values (e.g., "personally assisting people in trouble is very important to me," 4 items), altruistic love (e.g., "I would rather suffer myself than let the one I love suffer," 4 items), and altruistic behaviors (e.g., "gave money to charity," "gave up seat," 11 items). These measures were administered to a total of 2695 adults (1366 in 2002, 1329 in 2004). As expected, these measures tended to correlate with each other. Some but not all measures showed statistically significant increases from 2002 to 2004. Seven literature-based hypotheses mostly received mixed support. For example, consistent with previous research, women scored higher on empathy and altruistic values. However, men scored higher on altruistic love, perhaps because there is "an element of heroic stoicism and being a protector rather than passive self-sacrifice in this construct" (p. 111). Among the more robust correlates of greater empathy and altruism were belonging to groups (i.e., voluntary associations), believing that one should help friends, and active involvement with religion.

Brown's project sought predictors of UL, operationalized as individual volunteering and charitable giving. She drew upon modern economics approaches to examine predictors of UL in a sample representative of US adults (n=3003) as well as a much larger ad-hoc adult sample (n=29,333) from 40 communities around the US, collected as part of the Social Capital Community Benchmark Survey (SCCBS). In the project report, Brown and Ferris (2007) relied upon theories and analytic approaches drawn primarily from economics. Findings showed that social capital (social networks and norms of trust and reciprocity), human capital (education), and religious involvement predicted various facets of giving and volunteering. Furthermore, when levels of social capital were controlled, the direct influences of education and religiosity

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<sup>22</sup>Support for the 2004 GSS empathy/altruism module was through IRUL; support for the 2002 GSS module was through Fetzer Institute (Smith, 2006a, p. 3).

were reduced. Such reductions, the authors noted, might take place because religion and education foster giving in part *through* fostering social networks and norms; but another possibility is that social capital is the more fundamental cause, and previous analyses have overstated the effects of religion and education on giving. The findings were discussed primarily in the context of economics literature. Similar issues have been probed in an extensive research literature in sociology and psychology (e.g., Penner et al., 2005; Wilson, 2000).

Finally, Koopman and Butler’s project examined the UL-related constructs of altruism and generativity in the wake of the terrorist attacks of September 11, 2001, using an internet-based convenience sample of US adults (N=137) (Azarow et al., 2003). Participants provided personal narratives at baseline (Fall 2011) and follow-up (6 months later) regarding their experience of the personal meaning of the attacks. These narratives were subsequently coded for themes regarding altruism and generativity. Participants also responded to closed-form items about demographic and political beliefs. Results showed that altruistic themes were expressed by nearly half of participants at baseline (43%), but had declined significantly at followup (28%,  $p=.01$ ). Similarly, themes of generativity showed a marginally significant trend of decline from baseline (44%) to follow-up (34%,  $p=.07$ ). The most frequent targets for altruism were family and strangers. Political orientation was not significantly associated with either the presence or the type of altruism or generativity.

#### Summary / Questions

These projects revealed that UL-related attitudes and behaviors are widespread in US society, and are present in times of crisis as well as in times of calm. They also show that UL-related variables are not uniformly distributed in society, offering evidence suggestive of possible sources of UL (e.g., community service and religious involvement). Future research might examine questions such as:

- What are the population trends and correlates of UL, measured by newly-developed scales that are based in Sorokin’s work or in the related construct of compassionate love (e.g., Hwang, Plante & Lackey, 2008; Levin & Kaplan, 2010; Sprecher & Fehr, 2005) Do correlates of such UL measures differ from the correlates of empathy and altruism as measured by Smith (2008)? If so, why?
- After UL-elevated “altruistic communities” (Jerusalem et al., 1995, p. 120) form in the aftermath of disasters, measures of altruism often gradually decline to baseline. What community-based factors predict slower declines, or even the enduring retention of some crisis-related gains in UL, and how might such retention compare to processes of individual stress-related growth (Park, 1998)? What role is played by the community leaders that Jerusalem and colleagues call “appraisal makers” (Jerusalem et al., 1995)?

#### **VIII. Applied Intervention}**

Finally, the applied project by Wright and Aron operationalized UL as positive attitudes toward members of different ethnic groups. Wright and Aron have developed what they call the “Fast Friends” (FF) procedure, a set of friendship-building activities for two individuals who are previously unacquainted. FF procedures “reflect the process of self-sharing and trust that

develops over time in a naturally developing friendship” (p. 123, Davies et al., 2011). As developed by Aron and colleagues, the FF procedure typically requires about 45 minutes (Aron, Melinat, Aron, Vallone & et al., 1997). Compared to other forms of intergroup contact, friendships may have a stronger impact, partly through increased identification with the other group, involving processes that the authors have dubbed “including the other in the self” (p. 119; see also Aron et al., 2004). Evidence suggests that cross-group friendships not only can reduce prejudice, but also can move intergroup attitudes “beyond tolerance and toward compassionate love,” can improve the attitudes of other individuals not involved in the contact, and can improve contact partners’ attitudes toward other outgroups not involved in the contact (p. 120, Davies et al., 2011).

Wright and Aron applied the 45-minute FF procedure to all entering students at Stony Brook University (SBU) in Fall 2005. As part of a brief course (“SBU 101”), approximately 2400 students engaged in the FF procedure with a randomly assigned same-sex partner (Aron & Wright, 2006). Attitudes toward several ethnic groups were assessed one week prior to the FF procedure, immediately afterward, and 4 weeks later. Preliminary analyses of White participants (n=328) revealed significant benefits from being paired in the FF activity with a student of a different ethnic group (Davies et al., 2011; Davies, Wright, Aron, Eberhardt & Burbank-Bergsieker, 2007). Indeed,

White students paired with a member of any of the three target outgroups (African American, Asian, or Latino/a) reported significantly greater feelings of warmth for that outgroup 4 weeks postintervention, and, in addition, the scores themselves were not merely around the scale midpoint, indicating tolerance, but were much closer to the high end of the scale, indicating attitudes that were clearly positive. (p. 124, Davies et al., 2011)

Using a separate sample, Wright and Aron’s project also conducted a randomized laboratory-based intervention using the FF procedure with White, Asian-American, and Latina women. Analyses of White participants again revealed that cross-group versus in-group pairing was associated with significant improvements in intergroup attitudes. Those with outgroup pairings also showed lower feelings of intergroup anxiety, much stronger rejection of “antiminority” policies (e.g., “bans on affirmative action, tightening of immigration rules,” p. 123, Davies et al., 2011), and in a hypothetical “budget cutting task,” cut less money from non-White student group associations. The Wright and Aron project has not produced full empirical reports, but some of their findings have been discussed in a conference presentation and in a published chapter (Davies et al., 2011; Davies et al., 2007).

### Summary / Questions

Wright and Aron’s was the only project focused primarily on an intervention to raise levels of UL-related constructs. Its findings are very promising, suggesting that their “Fast Friend” intervention might in some form be widely used as a proactive, preventive procedure to enhance cohesion in communities, especially in heterogeneous communities divided by ethnicity or other factors. Questions for further research include:

- Can Wright and Aron’s findings be replicated by other researchers? Can they develop methods to reliably train others to effectively deliver the Fast Friend intervention?

- What are the conditions under which the Fast Friend intervention is effective? Can it be used to build UL across group boundaries based on religion? Socioeconomic status? Nationality?
- Could the Fast Friend intervention as applied to all entering students at Stony Brook produce similar results for entering students at other colleges or universities? Would this reduce overall levels of student stress, and make students more open to values related to UL?

### Chapters in Edited Books

Many book chapters have discussed UL research findings. These chapters fall into two broad categories: a) chapters appearing in *Altruism and Health*, a book edited by Stephen G. Post (2007a); and b) chapters appearing elsewhere. Most chapters in each category do not present original research, but cite earlier journal articles, providing helpful contextualization and interpretation of research findings.

In a few cases, chapters presented original research findings – these included the project led by Tom W. Smith (2008), which analyzed data from the General Social Survey, a biannual survey of a representative sample of the US adult population, as well as the project by Wright & Aron (Davies et al., 2011). Omoto's and Wilson's projects also published some primary reports as chapters (Omoto et al., 2008; Wilson & Csikszentmihalyi, 2007).

Table 7 shows that these represented 4 of at least 18 chapters published to-date that discuss IRUL first-wave work. Seven appeared in Post's *Altruism & Health*, which conceptualized altruism as referring to "a fundamental orientation of the agent that is primarily 'other regarding'" (Post, 2007a, General Introduction, p. 3). Eleven chapters appeared elsewhere. Chapters were published by projects in all eight categories, perhaps reflecting the widespread employment of edited books across diverse academic fields.

Outside of the four primary reports mentioned earlier, few if any of these chapters are devoted primarily to discussing findings from funded UL research. Rather, most of chapters placed funded UL research findings into a larger substantive context with relation to a preexisting research field or topic, typically reflected in the title of the book. The peer-reviewed versions of UL findings (Table 5) were often cited, and key features of interest were summarized, in relation to the preexisting topic of interest. Thus, readers become aware of the specific findings, and were also aware that UL-like constructs could be scientifically studied. However, few if any of these chapters alerted readers to the existence of UL or compassionate love as emerging research fields (e.g., by citing books edited by Post or Fehr).

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Table 7  
*Edited Book Chapters that Discuss IRUL-Funded UL Research*

| #  | PI                    | Author list                             | Chapter Title   | Book Title  |
|--|-----------------------|---|---|---|
| <b><u>(I) Evolutionary Psychology</u></b>              |                       |   |   |   |
| 1.   | Boehm                 | Boehm (2004a) <sup>a</sup>              | Explaining the Prosocial Side of Moral Communities                                      | <i>Evolution and Ethics: Human Morality in Biological and Religious Perspective</i> |
| 2.   | Boehm                 | Boehm (2007)                            | A short natural history of altruism and healing   | <i>Altruism and health: Perspectives from empirical research</i>                    |
| 3.   | Boehm                 | Boehm (2008a)                           | A Biocultural Evolutionary Exploration of Supernatural Sanctioning                      | <i>Evolution of Religion: Studies, Theories, and Critiques</i>                      |
| 4.   | Wilson                | Wilson & Csikszentmihalyi (2007)        | Health and the ecology of altruism  | <i>Altruism and health: Perspectives from empirical research</i>                    |
| <b><u>(II) Biological Mechanisms</u></b>               |                       |   |   |   |
| 5.   | Carter                | Carter (2007)                           | Monogamy, motherhood, and health  | <i>Altruism and health: Perspectives from empirical research</i>                    |
| <b><u>(III) Public Health &amp; Medicine</u></b>       |                       |   |   |   |
| 6.   | Hierholzer & Ghafoori | Ghafoori & Hierholzer (2007)            | The roles of love, attachment, and altruism in the adjustment to military trauma        | <i>Altruism and health: Perspectives from empirical research</i>                    |
| <b><u>(IV) Development: Child &amp; Adolescent</u></b> |                       |   |   |   |
| 7.   | Benson                | Benson Clary &c (2007)                  | Altruism and health: Is there a link during adolescence?                                | <i>Altruism and health: Perspectives from empirical research</i>                    |
| 8.   | Eisenberg             | Eisenberg & Eggum (2008)                | Empathy-related and prosocial responding: Conceptions and correlates during development | <i>Cooperation: The political psychology of effective human interaction</i>         |
| <b><u>(V) Development: Adult &amp; Late Adult</u></b>  |                       |   |   |   |
| 9.   | Omoto                 | Omoto & Schlehofer (2007) <sup>b</sup>  | Volunteerism, religiousness, spirituality, and the health outcomes of older adults      | <i>Altruism and health: Perspectives from empirical research</i>                    |
| 10.  | Omoto                 | Omoto & Snyder (2009) <sup>b</sup>      | The role of community connections in volunteerism and social action                     | <i>Youth empowerment and volunteerism: Principles, policies and practices</i>       |
| 11.  | Omoto                 | Omoto, Malsch et al (2008) <sup>b</sup> | Compassionate acts: Motivations for and correlates of volunteerism among older adults   | <i>The Science of Compassionate Love</i>  |

(table continued on next page)

(table continued from previous page)

|  |               |                             |  |   |
|--|---------------|-----------------------------|--|---|
| 12.  | Wink & Dillon | Dillon & Wink (2004)        | American religion, generativity, and the therapeutic culture   | <i>The generative society: Caring for future generations</i>                        |
| 13.  | Wink & Dillon | Wink & Dillon (2007)        | Do generative adolescents become healthy older adults?   | <i>Altruism and health: Perspectives from empirical research</i>                    |
| <b><u>(VI) Faith-Based Communities</u></b> |               |                             |  |   |
| 14.  | Oliner        | Oliner (2009)               | Altruism, apology, forgiveness, and reconciliation as public sociology                                     | <i>Handbook of Public Sociology</i>   |
| 15.  | Poloma        | Poloma (2006)               | Glossolalia, liminality and empowered kingdom building: A sociological perspective                         | <i>Speaking in tongues: Multi-disciplinary perspectives</i>                         |
| <b><u>(VII) Modern Society</u></b>         |               |                             |  |   |
| 16.  | Smith         | Smith (2008)                | Loving and caring in the United States: Trends and correlates of empathy, altruism, and related constructs | <i>The Science of Compassionate Love</i>  |
| <b><u>(VIII) Applied Intervention</u></b>  |               |                             |  |   |
| 17.  | Wright & Aron | Davies, Wright et al (2011) | Cross-group friendships: How interpersonal connections encourage positive intergroup attitudes             | <i>Moving beyond prejudice reduction: Pathways to positive intergroup relations</i> |

*Note.* Some but not all chapters were written during the initial funding period, and some but not all acknowledged funding from IRUL.

<sup>a</sup>Funded in part from IRUL, although author has stated that he cited to the John Templeton Foundation, the source of much of IRUL’s funding, “for brevity” (personal communication, 9 July 2012).

<sup>b</sup>Acknowledged funding from IRUL

### Books and Other Publications

The RFP also generated authored books that reported or discussed project findings related to unlimited love. In comparison to peer-reviewed journals that appeal primarily to researchers, these books sometimes reach wider audiences, such as human service practitioners or educated lay readers. Authored books also offer the advantage, in comparison to other genres, of permitting topics to be treated at greater depth.

Table 8 lists several books that addressed RFP-related research and acknowledged IRUL support. These were produced by projects in categories of later adult development (V) and faith-based communities (VI), perhaps reflecting greater guidance by disciplines that often report findings in books (e.g., sociology). Books were generated from primarily quantitatively-oriented projects, qualitatively-oriented projects, and mixed-method projects (e.g., respectively, Dillon & Wink, 2007; Oliner & Zylicz, 2008; Wuthnow, 2004). Other books also discussed findings from

Table 8

*Books and Project-Related Dissertations that Discuss IRUL-Funded UL Research (First Wave)*

| #                          | Topic Group           | PI            | Author list                 | Authored Book Title  |
|----------------------------|-----------------------|---------------|-----------------------------|--|
| <b><u>Books</u></b>        |                       |               |                             |  |
| 1.                         | V. Develop: Adult     | Emmons        | Greiner (2004)              | <i>The "gift of life": The role of gratitude in donating and receiving transplant organs</i>               |
| 2.                         | V. Develop: Adult     | Wink & Dillon | Dillon & Wink (2007)        | <i>In the course of a lifetime: Tracing religious belief, practice, and change</i>                         |
| 3.                         | VI. Faith communities | Cowart        | Cowart (2008)               | <i>An American Awakening: From Ground Zero to Katrina: The People We Are Free to Be</i>                    |
| 4.                         | VI. Faith Communities | Oliner        | Oliner & Zylicz (2008)      | <i>Altruism, intergroup apology, forgiveness, and reconciliation</i>                                       |
| 5.                         | VI. Faith communities | Poloma        | Poloma & Hood (2008)        | <i>Blood and Fire: Godly Love in a Pentecostal Emerging Church</i>   |
| 6.                         | VI. Faith Communities | Wuthnow       | Wuthnow (2004)              | <i>Saving America?: Faith-based services and the future of civil society</i>                               |
| <b><u>Dissertation</u></b> |                       |               |                             |  |
| 7.                         | VI. Faith Communities | Wuthnow       | Walling (2005) <sup>a</sup> | <i>The power of receiving: Finding moral meaning in care-receiving episodes [Princeton. Dissertation].</i> |

<sup>a</sup>Discussed project findings, although no acknowledgement of IRUL funding

various RFP-funded projects, including books authored by project PIs (e.g., Boehm, 2012; Wilson, 2011), as well as others (e.g., Kramer, 2007).

**Other Impacts of IRUL-Funded Research**

As noted earlier, the MIT conference that helped catalyze the first wave of IRUL research involved a conversation between numerous disciplines ranging from theology to neuroscience. The conference produced two very similar RFPs, that nevertheless reflected variations in emphasis: Whereas the Fetzer initiative placed greater emphasis on Underwood’s (2002) newly-constructed definition of *compassionate love*, IRUL’s initiative placed greater emphasis on Post’s (2002; 2003b) more theologically and humanistically grounded conception of *unlimited love*, which had much in common with Sorokin’s (1954/2002) earlier conceptions of love energy. The striking similarity of the two RFPs and the substantial overlap of their core concepts makes it impossible to fully disentangle the influences of the two funding initiatives. Over the long run, it seems likely that both concepts (unlimited love and compassionate love) will have complementary roles to play in fostering an improved, historically grounded and richly interdisciplinary understanding of love. Still, it is possible to track patterns of citations as clues to assess the challenges and accomplishments in the complementary aspects of field development represented by these two constructs.

With regard to compassionate love, a previous review revealed a pattern of citation that was gradually growing, both qualitatively and quantitatively (Oman, 2010a, 2011). More specifically, recent years have witnessed the publication of an edited book dedicated to compassionate love, entitled *The Science of Compassionate Love* (Fehr et al., 2008), as well as a sustained discussion of compassionate love in a very prominent psychology journal, the *Annual Review of Psychology* (Berscheid, 2010). Similarly, searches in professional databases for the phrase “compassionate love” show a steadily increasing usage in professional literature. Table 9 (Part B) displays how citations to “compassionate love” in PsycINFO references have grown from zero for the entire 20<sup>th</sup> century, to approximately 20 per year beginning in 2008. A similar pattern is visible across multiple social science and philosophical databases (Table 9, Part A), where almost 30 references per year have recently appeared.

Post’s (2003b) book entitled *Unlimited Love* shows a slightly different pattern, as measured by Google Scholar, perhaps the most inclusive database (Table 9, Part C). After its publication in 2003 when it was cited twice, Post (2003b) rapidly rose to an average of 8 citations per year beginning in 2005, where it has held steady. The term “unlimited love,” after a spike in 2005, has been cited more often since 2009 than earlier in both PsycINFO and in multiple databases (Table 9, Parts A and B). In contrast, “altruistic love,” a term used in the 20<sup>th</sup> century by Sorokin, drew the most citations between 2007 and 2009, and is now slightly reduced, although Sorokin’s work on love seems to have drawn fairly steady citations throughout the last dozen years. Poloma and Hood’s (2008) recently coined term “godly love” has drawn increasing citations since about 2010. The first wave of IRUL-funded projects, however, have been uneven in citing foundational conceptual texts such as Post (2003b) and Sorokin’s work on love. After several citations from 2002 to 2006, a stream of 23 peer-reviewed journal articles from 2007 to 2011 failed to cite these texts, until two of Exline’s articles cited these texts in 2012 (see Table 9, Part D).

The increasing citation of “compassionate love” is surely the result of many influences, including direct efforts from both the Fetzer RFP and the first-wave IRUL projects, as well as interest and collaborations that grew out of them. Direct influence from the IRUL projects is evident not only in project publications that cite compassionate love (e.g., Omoto et al., 2008), but also book chapters appearing in *The Science of Compassionate Love* (Omoto et al., 2008; Smith, 2008). Conversely, some projects funded entirely by Fetzer also have cited Sorokin and/or Post (i.e., Beauregard, Courtemanche, Paquette & St-Pierre, 2009; Mattis et al., 2009; Oman, 2010a; Oman et al., 2010). Thus, although both the Fetzer and IRUL initiatives have encouraged citation to a variety of love-related terms, the various love-related terms are showing different trajectories over time, with “unlimited love” holding steady at a modest level, and “compassionate love” showing the steadiest and most substantial growth.

Table 9  
*Use of the “Unlimited Love” and Related Phrases in Various Sources, by Year*

| Source of Use  | ≤2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | All |
|--|-------|------|------|------|------|------|------|------|------|------|------|------|-----|
| <u>A. Multiple citation databases:<sup>a</sup> in references</u> |       |      |      |      |      |      |      |      |      |      |      |      |     |
| • agape <sup>b</sup>   | 26    | 9    | 8    | 10   | 8    | 16   | 12   | 81   | 69   | 61   | 59   | 34   | 393 |
| • altruistic love  | 13    | 6    | 6    | 8    | 19   | 26   | 23   | 38   | 44   | 31   | 26   | 16   | 269 |
| • compassionate love   | -     | 2    | 1    | 0    | 8    | 11   | 8    | 28   | 24   | 31   | 26   | 34   | 184 |
| • unlimited love   | -     | -    | 1    | 2    | 9    | 4    | 4    | 5    | 7    | 9    | 5    | 9    | 55  |
| • godly love   | -     | -    | -    | -    | -    | -    | -    | 1    | 1    | 4    | 7    | 6    | 19  |
| • Sorokin’s work on love <sup>c</sup>                            | 4     | 8    | 4    | 0    | 9    | 6    | 5    | 8    | 12   | 7    | 9    | 6    | 78  |
| <u>B. PsycINFO: in references</u>                                |       |      |      |      |      |      |      |      |      |      |      |      |     |
| • agape  | 12    | 9    | 8    | 5    | 7    | 13   | 10   | 14   | 8    | 11   | 9    | 12   | 120 |
| • altruistic love  | 13    | 5    | 4    | 6    | 17   | 21   | 23   | 28   | 26   | 17   | 17   | 12   | 191 |
| • compassionate love   | -     | 2    | 1    | 0    | 8    | 10   | 8    | 22   | 15   | 21   | 18   | 27   | 133 |
| • unlimited love   | -     | -    | 1    | 1    | 7    | 2    | 4    | 2    | 3    | 7    | 2    | 6    | 35  |
| • godly love   | -     | -    | -    | -    | -    | -    | -    | -    | 1    | 2    | 3    | 4    | 10  |
| • Sorokin’s work on love <sup>c</sup>                            | 3     | 7    | 3    | 0    | 7    | 4    | 5    | 2    | 5    | 4    | 2    | 5    | 47  |
| <u>C. Google Scholar: Cites to Post (2003)<sup>d</sup></u>       |       |      |      |      |      |      |      |      |      |      |      |      |     |
| • any listed document  | -     | -    | 2    | 5    | 7    | 11   | 6    | 7    | 8    | 8    | 8    | 8    | 70  |
| • peer-reviewed journal  | -     | -    | 2    | 3    | 6    | 5    | 3    | -    | 3    | 4    | 4    | 3    | 33  |
| • book chapter   | -     | -    | -    | 1    | -    | 5    | 1    | 2    | -    | 2    | 3    | 3    | 17  |
| • book   | -     | -    | -    | -    | 1    | -    | 1    | 3    | 1    | -    | -    | 1    | 7   |
| • dissertation   | -     | -    | -    | 1    | -    | 1    | 1    | 2    | 4    | 2    | 1    | 1    | 13  |
| <u>D. Peer-reviewed journal-articles by UL projects</u>          |       |      |      |      |      |      |      |      |      |      |      |      |     |
| • articles citing Post (2003)                                    | -     | -    | 1    | -    | 1    | -    | -    | -    | -    | -    | -    | 2    | 4   |
| • articles citing Sorokin  | -     | 1    | 1    | -    | 1    | 1    | -    | -    | -    | -    | -    | 1    | 5   |
| • all project articles   | -     | 1    | 3    | 3    | 3    | 3    | 3    | 6    | 6    | 3    | 5    | 3    | 39  |
| • percent citing Post (2003) &/ or Sorokin                       | -     | 10   | 33   | 0    | 33   | 33   | 0    | 0    | 0    | 0    | 0    | 67   | 15  |

*Note.* Searches for agape conducted on 4 May 2013; all others conducted on 27 April 2013.

<sup>a</sup>Databases searched through ProQuest included: ebrary ebooks, EconLit, International Bibliography of the Social Sciences, Philosopher’s Index, PILOTS: Published International Literature on Traumatic Stress, ProQuest Dissertations & Theses A&I, PsycINFO, Social Services Abstracts, Sociological Abstracts, Worldwide Political Science Abstracts.

<sup>b</sup>The large increases in citations to agape beginning in 2008 can be attributed to largely to the commencement in 2008 by ProQuest of indexing dissertation references. For the years 2008 to 2012, the number of references attributable to dissertations is 61, 57, 46, 49, and 22.

<sup>c</sup>Search terms ref=“Sorokin” and (ref=“ways and power of love” or ref=“Explorations in altruistic love and behavior” or ref=“altruistic love; a study of American good neighbors and Christian saints”) in order to detect references to any of Sorokin’s 3 works on love.

## **Discussion**

### **Major Findings and Patterns**

This review examined 39 peer-reviewed papers directly supported by IRUL’s first-wave research initiative, and identified additional discussions first-wave IRUL research in 6 additional books and 18 book chapters. Thirty out of 32 projects produced publications, and 23 of them produced articles in peer-reviewed journals. One of these primary reports (Poloma & Hood, 2008) focused on investigating a construct, “godly love,” that captured a great deal of the UL-2003 definition of unlimited love as reflecting high levels for all five of Sorokin’s dimensions of love. In one way or another, all projects addressed the *substance* of UL as regard for the other. Between them, the various projects probed each of the dimensions of other-regarding love identified by Sorokin, including extensity, intensity, purity, duration, and adequacy – as discussed more fully below.

The 32 projects addressed a wide range of UL-related constructs that varied greatly in their closeness to full UL (see Figure 1). Examples include projects that focused on empathy (Eisenberg, Fogel, Preston, Smith), prosocial behavior (Eisenberg, Loucks, Schwartz), acts of kindness or generosity (Exline, Richerson), civic engagement (Smetana #1), volunteering (Brown, Cowart, Omoto), regard for others (Benson), benevolent spousal love (Jeffries), generativity (Koopman & Butler, Wink & Dillon), moral concern (Smetana #2), physical self-sacrifice (Emmons), communal sharing (Boehm), intergroup friendship (Wright & Aron), offering of consolation (de Waal) or apology (Oliner), and parental caring for non-offspring (Carter) and offspring (Hierholzer & Ghafoor, Leckman & Swain). Many of projects examined multiple UL-related constructs. Smith’s project, besides producing a chapter report (Smith, 2008), generated a nationally representative and publicly accessible dataset that contains numerous measures of UL-related constructs, such as empathy and altruism. One project by Poloma pioneered a “methodological agnosticism,” focusing sustained attention not merely on near-unlimited love, but on infinite unlimited love as perceived and experienced in a Pentecostal church (Poloma & Hood, 2008).

Together, what do all of these projects’ findings reveal? They represent initial confirmation that other regarding love is present in varying levels in all sectors of society, shows evidence of possessing distinctive hormonal and neural correlates, has intelligible interpretations of its evolutionary and developmental history, is fostered by various sociocultural factors that appear to include both religious and spiritual practices, and can be fostered through interventions.

Empirical support – varying in strength from suggestive to compelling – was found for a range of theorized or observed antecedents and consequences of UL (see Table 5 and Table 6, columns on “Finding”):

- Antecedents supported: social pressure for stable nutrition, social closeness, kinship, female gender, specific hormones, breastfeeding, vaginal delivery, mildly stressful experiences, receipt of UL as infant, secure attachment, mother’s good communication, toddler self-awareness, specific brain region activation, experience of similar situation, religiousness, intrinsic religiousness, charismata (gifts of the spirit), positive religious coping, spiritual practices, spirituality, mother’s civic engagement, friendship with minority, social support from multiple sources, usual adolescent development, education, social capital, schema connecting goals and

actions, age, empathy, humility, gratitude, collective trauma, providing human services through congregations, specific interventions (“Fast Friend”)

- Consequences supported empirically: oxytocin, brain response to infant cry, autonomic system response, conquering fear, less PTSD, improved well-being, higher marital quality, lower heart disease risk (female), more community volunteering, gratitude, and amazement; but also – for specific UL-related constructs – increased distress among children, shame, mistrust, lower charitable contributions, less hippocampal neurogenesis, and more externalizing.

More specific findings, related to specific areas, include

- A 45-minute “Fast Friends” intervention can foster persisting gains in warmth between college students of different ethnic groups (Davies et al., 2011);
- Receiving acts of kindness provided outside of the contextually appropriate social norms can sometimes lead to negative emotions such as feelings of weakness, shame, or mistrust (Exline et al., 2012);
- Social service recipients experience greater trust toward service providers based in religious congregations than those based in either secular or religious service agencies (Wuthnow et al., 2004);
- Distant healing intentions can produce measurable physiological changes in the skin conductance of recipients, according to evidence provided by Radin, Stone, Levine, and colleagues (2008);
- Increased oxytocin is linked with and may be a causal support for other-regarding behavior that ranges from human mothering to allo-parenting (foster-parenting) by voles (Bales et al., 2004; Swain et al., 2007);
- Evidence suggests that the most economically distinctive feature of the human species is the capacity of large groups of unrelated (not close kin) human beings to hold communal property that they are obliged to share – thereby stabilizing nutritional intake of all individuals in environments where food is sporadically available in large quantities (Boehm, 2004b);
- Indonesian minority-group adolescents engage in more prosocial behavior and empathy when they have a close friendship with a majority-group youth (Eisenberg et al., 2009);
- Both religion and spirituality predict generativity and wisdom, two qualities related to unlimited love, in life-course studies of Californians (Wink & Dillon, 2003);
- Significant levels of altruism can be observed in the average US adult, and may be especially elevated in the aftermath of devastating crises such as the attacks of September 11, 2001 (Azarow et al., 2003; Cowart, 2004; Smith, 2008);
- More than 40 cases of inter-group apology have been recorded (Oliner & Zylicz, 2008).

## Impact on Field Development

Together, these projects have laid important foundations for research on unlimited love and related forms of other-regarding love as a field of scientific research. As these projects began, the most relevant published sources for a science of unlimited love as conceptualized by the 1999 conference were books by Sorokin (1954/2002), Post, Underwood, Schloss, and Hurlbut (2002), and Post (2003b). From this baseline, these projects have contributed to field development in at least five ways: a) multidimensional probing, b) generation of needed empirical information, c) terminological coordination, d) conceptual refinement, and e) reinvigoration of methods for studying highly paradigmatic forms of unlimited love.

First, one or more projects probed or measured each of five dimensions of love identified by Sorokin (1954/2002). Specific examples include:

- *Extensity of love* beyond usual egoistic and group boundaries was investigated in projects on post-disaster altruistic communities (Cowart), intergroup apology (Oliner), community service (Poloma). Extensity of other-regard was also successfully enhanced by community-based and laboratory interventions (Wright & Aron);
- *Intense love*, as represented by willingness to make comparatively large sacrifices in order to benefit the other, was investigated by projects on organismic self-sacrifice (Emmons), kindnesses departing from relational norms (Exline), and intergroup altruism (Oliner);
- *Purity of love* was investigated by projects on virtuous and benevolent love within marriage (Jeffries), idealistic non-professional provision of human services (Cowart, Poloma), and professional versus non-professional provision of human services (Wuthnow);
- *Duration of love* was investigated by projects on post-disaster altruistic communities (Cowart, Koopman & Butler), enduring marriages (Jeffries), and as evolutionarily stable dispositions or traditions that encourage love (Boehm, Wilson #1);
- *Adequacy of love* was investigated by projects that investigated the effects of receiving non-normative acts of UL (Exline), the relation between moral identity and beneficent actions (Reimer), the effects of faith-based provision of human services (Wuthnow), and the effects of intergroup apology (Oliner).

These findings with regard to the various dimensions of love will contribute to more sophisticated future efforts to understand how instances of other-regarding love may be simultaneously characterized or even measured on each of Sorokin's (1954/2002) 5 dimensions of love. A further, more systematic effort along these lines was recently made by D'Ambrosio and Faul (2013), who developed a 15-item, 5-subscale self-report measure of love experienced towards a former spouse (see also D'Ambrosio, 2012).

Second, these projects together have helped to answer a wide range of empirical questions identified in the earlier literature. Compared to pre-existing work, these studies have generally fallen at least as close, or closer, to the targeted construct of unlimited love (e.g., attaining greater centrality Figure 1), or expanded knowledge in other ways. For example:

- Compared to previous national surveys of UL-related indicators, Smith (2008) employed a far richer and better-developed set of measures;

- Increases in UL-related measures were documented in theoretically grounded studies of both real-world and laboratory-based interventions (Davies et al., 2011);
- Radin and colleagues (2008) broke new ground by studying distant healing intention in the context of powerful real-world UL-driven motives to heal;
- Some projects emphasized UL primarily as a disposition or tendency pertaining to a person (Eisenberg et al., 2009; Schwartz et al., 2009), group (Wuthnow, 2004), culture (Wilson, 2005), or species (Boehm, 2004b), whereas others sought deeper understanding of specific episodes or states of UL (e.g., Kim, Leckman, Mayes, Newman et al., 2010; Oliner & Zylicz, 2008; Preston et al., 2007; Radin et al., 2008; Romero et al., 2010), and still others examined both (Exline & Hill, 2012; Exline et al., 2012).

Overall, the degree of centrality (as represented in Figure 1) for studying compassionate love of IRUL first-wave published findings was similar to that obtained for the Fetzer RFP – more specifically, most studies studied CL-related constructs in novel ways, with only a small minority investigating a construct that attended to all defining features of compassionate love (Oman, 2010a, 2011). Since unlimited love is a more restricted and thus more demanding focus than compassionate love (Figure 1), each of these initiatives could also be said to have been more successful in supporting studies of compassionate love than of unlimited love (especially *infinite* unlimited love, of which the clearest example is Poloma’s project).

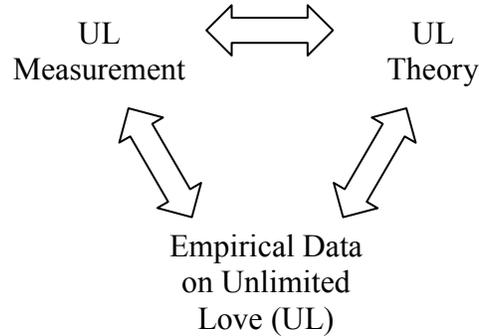
Third, in conjunction with the Fetzer RFP, the first wave of IRUL projects initiated processes of cross-referencing and terminological coordination that are essential for a topic to emerge as a coherent and active field of empirical research. While cross-referencing has been modest for the term “unlimited love” itself,<sup>23</sup> increased cross-referencing has been more apparent for some related terms, especially “compassionate love.” As discussed above, and in detail by Oman (2010a; 2011), compassionate love is the focus of an edited book (Fehr et al., 2008), has been mentioned in prominent review articles (Berscheid, 2010), and is drawing increasing citations (Table 9). The phrase “godly love,” which emerged much more recently, is also beginning to draw citations, although it is too early to tell how widely it will be adopted.

Fourth, several projects contributed reviews or theories that advanced the conceptual depth and interconnectedness of UL or a closely related field. Empirical reviews and/or theory construction closely related to UL were the entire focus of some refereed articles (e.g., Boehm, 2008b; Jeffries, 2002; Swain et al., 2007), and were also substantial portions of several other journal articles, books, and book chapters (e.g., Eisenberg et al., 2009; Gordon et al., 2011; Wilson & Csikszentmihalyi, 2007; Wuthnow, 2004). Some of these conceptually innovative works have drawn follow-up citation from independent researchers (e.g., Oda, Hiraishi, Fukukawa & Matsumoto-Oda, 2011).

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<sup>23</sup>As shown in the last rows of Table 9 (Part D), many IRUL-funded studies did not cite key UL texts, thereby failing to place their findings in this larger context. In part, these omissions may occur because studies of novel topics are more difficult to publish, and publication in refereed journals typically requires explanation and justification with reference to well-established concepts and paradigms in the journal’s field.

*Figure 2*  
 Mutual Synergistic Influence of Theory, Measurement,  
 and Empirical Data in Research on Unlimited Love (UL)



Mutually supportive processes

- Refined/extended measures permit collection of better/additional data and support clarification of theory
- Better data permit testing/refinement of theory, and refining of measures
- Improved theories encourage better designed measures and collection of more meaningful and informative data

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Finally, Poloma’s project pioneered a fuller revival of Sorokin’s (1954/2002) concepts and methods, using them to study unlimited love in one of its most conceptually paradigmatic forms: As an energy that may be infused into human beings as “an inflow of love... from an intangible, little-studied, possibly supraempirical source called ‘God,’ ... ‘Truth,’ ... and so on” (p. 26).<sup>24</sup> Methodologically, Poloma’s team also pioneered the application of the influential Interaction Ritual Chain theory of Randall Collins (2004) to the study of other-regarding love. Together with her team’s application of methodological agnosticism (Porpora, 2006), these innovations point toward new pathways for going beyond the study of UL-related constructs, even the study of the closely UL-related construct of compassionate love, to study unlimited love in its more fully paradigmatic forms. Some of these pathways were followed in her more recent, post first-wave IRUL-supported work (Lee, Poloma & Post, 2013).

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<sup>24</sup>In as much as human beings are viewed as *essentially* finite creatures – a common perspective in both science and theology – then “unlimited love” per se, as *unlimited*, can only reside in such a trans-human “higher power,” although human beings might serve as finite *channels* for its infinite love. Sorokin (1954/2002) states that “the supreme altruists of the most different nations and periods unanimously state that in doing their acts of sublime love they act as a mere instrument of the supraconscious, called by different names: God... Tao, the Great Reason, the Oversoul... Brahma [sic]... Chit...” (p. 127).

## Future Directions

Evidence reviewed earlier reveals many important contributions by IRUL first-wave projects to developing the scientific fields of other-regarding and unlimited love. Many project publications contain suggestions for future research in specific sub-areas related to other-regarding love. In addition, findings suggest several cross-cutting issues in which future work is needed, including further work on a) measurement development, b) encouraging explicit linkage to the unlimited love literature, c) clarifying definitions and concepts, d) experimenting with varieties of methodological agnosticism, and e) other cross-cutting or overlooked substantive empirical questions. Advances in each of these areas are likely to synergistically reinforce and stimulate advances in other areas (see Figure 2).

*A. Measurement.* Valid measures of central constructs are essential foundations of any scientific field. Further progress in the empirical study of unlimited love will require improved qualitative and/or quantitative measures that facilitate replication and systematic testing of hypotheses. Since the MIT conference (1999), several new measures of passionate love have been developed, perhaps most notably the self-report scale developed by Sprecher and Fehr (2005) (see discussion in Oman, 2010a; 2011) (see also a new measure from Levin & Kaplan, 2010). However, the systematic study of unlimited love as a distinctive subtype of passionate love will require measures that distinguish unlimited love (or approximations such as “near-unlimited love”) from other forms of passionate love that are lower in extensity, intensity, purity, or other relevant dimensions of love that were identified by Sorokin (1954/2002), and mentioned in Post’s UL-2003 definition, quoted earlier.

A new five-dimensional Sorokin-inspired measurement instrument, a self-report scale with 15 items and good internal reliability, has recently been developed by D’Ambrosio and Faul (2013). It assesses a respondent’s love towards his or her former spouse. If further studies confirm the validity of this measure it could become a prototype for constructing similar multidimensional Sorokin-inspired measures for use with other populations. However, not all measures need be quantitative. Additional work is needed, for example, to build on Poloma and Hood’s qualitative interview studies. Coding schemes are needed to facilitate systematic and replicable discernment of the degree to which the love reported by an interviewee reflects or manifests each defining dimension of unlimited love. Over the long-term, one benchmark of progress in an empirical science of unlimited love would be the appearance of an article or volume that reviews and discusses a collection of specifically UL-related measures, and their empirical and conceptual relations to each other. Such a review would be analogous to volumes available in other areas such as spirituality, religiosity, and social support (Cohen, Underwood & Gottlieb, 2000; Fetzer, 1999; Hill & Hood, 1999).

*B. Encouraging explicit linkage to the unlimited love literature.* It is notable that most first-wave IRUL-supported reports did not articulate their findings with reference to the literature on unlimited love (Table 9, Part D). This is similar to findings reported elsewhere that the Fetzer RFP-supported studies of passionate love showed low rates of citing passionate love literature (Oman, 2010a, 2011). Such omissions may often be understandable from the point of view of individual studies, but represent a loss to field development. For passionate love, such failures seem likely to become rarer with the publication of useful and easily cited reviews (e.g., Fehr et al., 2008). Better citation of unlimited love literature might also benefit from encouragement by IRUL or other funders (for suggestions see Oman, 2010a).

Encouraging appropriate citation of literature on unlimited love may be especially challenging in view of the paucity of validated measures of the field’s core construct, unlimited love (in either its “infinite” or “near” conceptualizations). Oman (2010a) suggested that the phrase “compassionate love” could beneficially be used to designate the overall field of research on other-regarding love. However, terminology is still needed to designate instances of other-regarding love that are high in extensity and other dimensions identified by Sorokin (1954/2002). For this purpose, “unlimited love” arguably remains the leading candidate, preferable to alternatives such as “agape” – perhaps too tied to a single tradition<sup>25</sup> – and “altruistic love,” which is used in diverse and contradictory ways, and increasingly burdened by associations with evolutionary psychology (Table 1). In contrast, as elucidated by Post (2003b), the term “unlimited love” now clearly evokes paradigmatic instances of the phenomenon it designates (e.g., exemplars from spiritual traditions) as well as conceptual schemes that support probing empirical investigation (i.e., Sorokin, 1954/2002). When additional validated measures are available, “unlimited love” will connote not only an ideal type and a broad and important topic, but also a research field with a clearly identifiable empirical core. In the meanwhile, by yoking empirical research with a call to understand the methods and peak achievements of love across all religious traditions, the phrase unlimited love serves to highlight an essential scientific and cultural frontier for modern society.

*C. Clarifying definitions and concepts.* Oman (2010a; 2011), recommended further work to conceptually clarify the compassionate love construct. It is possible that unlimited love could in some cases benefit from similar clarification (e.g., of the “adequacy” dimension, which parallels the compassionate love criterion of “cognitive accuracy”). However, compared to the newly forged construct of compassionate love, unlimited love already benefits from book-length conceptual treatments by Post (2003b), and, arguably, by Sorokin (1954/2002) (although Sorokin did not use the actual term unlimited love). Indeed, like the century-old work of William James (1890/1923; 1961/1902), the half-century-old work of Sorokin (1954/2002) on love remains impressive in its breadth and depth. It is pervaded by potentially testable hypotheses, given the appropriate measures and experimental designs. Funders such as IRUL or Templeton might consider establishing yearly student paper competitions, with prizes awarded to those who most ingeniously “mine” Sorokin’s work for testable hypotheses.

One facet of Sorokin’s work might especially benefit from a robust and sympathetic consideration in the light of contemporary scientific thought: his notion of love as an *energy*. When his magnum opus on love was published in 1954, Freudian notions of psychic energy were still widely influential. They soon fell out of favor in mainstream psychology, however, along with essentially all conceptions of psychic energy.<sup>26</sup> It is only in the past decade that notions of psychic energy have been re-emerging, for example, as expounded by Baumeister and colleagues (Baumeister, 2002; Gailliot et al., 2007; see also other concepts of energy, such as by Collins, 2004; Ryan & Deci, 2008). How does Sorokin’s concept of love as an energy relate to these re-

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<sup>25</sup>Post (2003b) writes that “The expression ‘unlimited love’ seems to capture the essence of *agape*, free of a narrow association with any one faith tradition, and should appeal more broadly across cultures, languages, and academic disciplines or fields” (p. 17).

<sup>26</sup>One leading psychologist and former APA president who himself is conducting research on energy remarked informally to the author that by the 2000s, conceptions of energy in psychology “had been gone for so long that people were no longer opposed to them.”

emergent concepts of energy, and the empirical research on which they build? In what ways might these different energy theories enrich each other and clarify each others' assumptions? (for historical perspectives see Henderson, 1972; McIntosh, 1986; Pumpian-Mindlin, 1959; Wallerstein & Applegarth, 1976.)

Also meriting investigation is the relation of love energy to the energy embedded in negative emotions such as hatred and anger. Various interconnections have been argued. Soon after his return to India, Mahatma Gandhi reported in 1920 that he had “learnt through bitter experience the one supreme lesson to conserve my anger, and as heat conserved is transmuted into energy, even so our anger controlled can be transmuted into a power which can move the world” (Gandhi, Prabhu & Rao, 1967, p. 16). Sorokin (1954/2002, pp. 464-465) acknowledge that “Hatred is still one of the most powerful emotions of man,” but argued that it can be “rechanneled” into a common human fight against disease, poverty, ignorance, and other problems. More recently, Goetz, Keltner, and Simon-Thomas (2010) offered a theory of compassion in which cognitive appraisals play a key role in determining whether an individual responds to others' negative outcomes with anger as opposed to compassion (see their Figure 1). Such recurring perspectives beg the question: Can the energy of negative emotions be converted into love? If so, when and how does such conversion occur?

*D. Experimenting with varieties of methodological agnosticism.* Poloma and Hood (2008) used what they called “methodological agnosticism.” They cite Porpora (2006), who explains that methodological agnosticism will “allow the supernatural explanation to compete freely against naturalistic rivals so that it becomes an empirical matter in any given case which kind of explanation is best” (p. 58). Porpora points to such methodology as well-represented in the field of psychology, from James' (1902/1961) *Varieties of Religious Experience* to more recent exemplars such as an APA-published volume on anomalous experience (Cardeña, Lynn & Krippner, 2000). In research on other-regarding love, such methodological agnosticism may be needed, for example, in balanced inquiry into how human beings experience an “inflow” or “infusion” of love from a supra-mundane source (Sorokin, 1954/2002, pp. 24, 372).<sup>27</sup>

Clearly, researchers should not always feel constrained to grant validity to reported experiences of supra-mundane realities. For example, Luhrmann (2012) has used a methodologically agnostic approach to study Pentecostal streams of US Evangelical Christianity in which conversations with God are commonly believed and reported. Luhrmann reports that “by the time a congregation expects every congregant to have personal conversations with God, that congregation expects many of those supposed conversations to be self-interested fantasies” (p. 70). Similarly, from a very different religious tradition, Mahatma Gandhi<sup>28</sup> wrote that he

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<sup>27</sup>Sorokin (1954/2002) found it plausible to “assum[e] that the total magnitude of love energy in an individual is finite” (p. 24), and would diminish over time unless “replenished by an inflow from other persons or other sources, empirical or transcendental” (p. 24, emphasis dropped). He notes that human exemplars of exceptional love, especially those who face persecution from human sources, typically “draw their love energy from a transcendental source, by whatever name they call it” (p. 27).

<sup>28</sup>At least once, Gandhi himself also reported hearing the voice of God. He wrote that “I saw no form. I have never tried, for I have always believed God to be without form. But what I did hear was like a Voice from afar and yet quite near. It was as unmistakable as some human voice definitely speaking to me, and irresistible. I was not dreaming.... Could I give any

would “submit that it is not everyone claiming to act on the urge of the inner voice [who] has that urge. Like every other faculty, this faculty for listening to the still small voice within requires previous effort and training, perhaps much greater than what is required for the acquisition of any other faculty” (Gandhi et al., 1967, p. 32). Thus, a methodology that problematizes (i.e., pursues naturalistic explanations for) *some but not all* reported spiritual experiences is an approach supported both *emically* and *etically* – that is, supported both internally and externally to religion (Berry, 1989).

How should a researcher tease apart reports of spiritual experiences that are worthwhile to analyze and explain in terms of naturalistic psychosocial factors, from those where such explanations are best avoided and “bracketed”? Similarly, how might one referee a “compet[ition]” between a supernatural and natural explanation for a reported experience of inflowing divine love (Porpora, 2006, p. 58)? Optimal sorting will depend on many factors, ranging from the research question to the need to preserve an ongoing rapport with participants. But one key input meriting exploration is surely the perspective held by the religious community itself. Most traditions offer criteria for discerning valid spiritual experiences (Luhmann, 2012, pp. 63-66, lists four common criteria used by Pentecostals). Similarly, many traditions recognize greater discernment in some individuals, and skill in discernment is expected in certain roles, such as the Hassidic tzadik (Judaism), the Russian staretz (Christianity), the Tibetan lama (Buddhism), or the Indian guru (Hinduism). Future empirical studies could seek to more systematically gather input from such individuals for appraising which reported experiences of inflowing divine love merit the most intense investigative attention.

Also of interest would be attempts to understand how people’s lives may continue to be shaped by individually or collectively *remembered* experiences of divine love – such as memories of charismatic spiritual leaders, or profound experiences in prayer or meditation. Such attention to remembered experiences of love might be especially helpful for studying the inflow of unlimited love to adherents of traditions such as mainline Protestantism, where spiritual experiences are celebrated from the past, but less commonly reported at present. With regard to the importance of remembered spiritual experiences, Huston Smith (1976/1992) has argued that for all major faith traditions, “the goal, it cannot be stressed too often, is not religious experiences; it is the religious life” (p. 155). Thus, even when spiritual experiences are received, we must distinguish

between individuals who experience flashes of insight and others who stabilize these flashes and turn them into abiding light. This stabilization need not require that the terrain the light discloses remain in direct view... It is enough if the terrain is remembered, but the memory must be operative rather than idle... Operatively remembered, the... insight stabilizes to become [a] defining sense of reality. (Smith, 1976/1992, p. 113)

How are spiritual experiences of a group or an individual “stabilized”? How are memories of group or individual experiences of infinite divine love made “operative rather than idle”? These

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further evidence that it was truly the Voice that I heard and that it was not an echo of my own heated imagination? I have no further evidence.... But I can say this – that not the unanimous verdict of whole world against me could shake me from the belief that what I heard was the true Voice of God” (Gandhi & Prabhu, 1962, p. 38).

are questions meriting systematic exploration through a variety of methodologically agnostic approaches.

*E. Substantive empirical questions.* Many empirical questions for future research have already been identified in project publications, and in the preceding review of journal article reports. Examples of potentially useful future directions on specific sub-topics of UL research include pathways that mediate religious effects on UL, strategies used to self-regulate different dimensions of UL, and the generalizability and health effects from UL interventions (from classes IV, V, and III+VIII, respectively).

Some of the more suggestive or important empirical results on UL in various substantive areas may merit attempts at conceptual replication that employ new generations of measures. These include not only measures inspired by Sorokin (D'Ambrosio & Faul, 2013; Levin & Kaplan, 2010), but also new measures for compassionate love (Hwang et al., 2008; Sprecher & Fehr, 2005). For example, how do interventions developed by Wright and Aron affect these measures of love?

Other potentially important empirical questions might be suggested that do not fit conveniently into any single study category, but are relevant to many of them. Four cross-cutting examples are:

- How is UL developed and maintained in saint-like individuals who manifest exceptional levels of love? Post (2003b) noted that “we encounter astounding examples of unselfish human love and sacrifice, suggesting either that our capacity for love is much greater than we might imagine, or that we can be lifted up” (p. 11). For example, Gandhi stated that “by a long course of prayerful discipline, I have ceased for over forty years to hate anybody. I know this is a big claim. Nevertheless, I make it in all humility” (quoted p. 56, Easwaran, 1997). Similar reports might be found for other individuals widely revered as saints. Do these mental states occur in part because such individuals have developed an exceedingly compassionate style of cognitive appraisals? If so, what additional factors contribute to such transformations?
- How is UL fostered or hindered by various religious and spiritual practices, such as meditation, prayer, attendance at services, and volunteer service to others? Is UL most effectively fostered by certain combinations of spiritual practices that perform complementary functions (e.g., Oman, 2010b)?
- To what extent are dimensions of love independent from each other? Are some individuals dispositionally higher on one dimension (e.g., extensity), whereas other individuals are higher on a different dimension (e.g., intensity)? What are demographic and other predictors of an individual’s stronger and weaker dimensions (e.g., how much does youthfulness correlate with intensity)? Are there any discernable trade-offs between different dimensions of love? Numerous similar questions are raised and discussed by Sorokin (1954/2002), offering a treasure trove of potentially researchable questions.
- To what extent is it possible to characterize human dyads, groups, or societies as enacting different levels of other-regarding love? Many constructs, including control, efficacy, coping, motivation, and modeling have been conceptualized or measured at

levels of both individuals and groups (e.g., see Haidt & Rodin, 1999; Oman & Thoresen, 2003). Wuthnow's project examined perceptions of group-level qualities related to UL (Wuthnow et al., 2004). But can additional impartial, reliable, and valid *measures*, reasonably independent of ideological bias, be devised for assessing dyadic or group-level unlimited and other-regarding love?

More broadly, Oman (2010a; 2011) suggested that future work should also continue to seek an integrated understanding of the biological, developmental, social, and cultural/spiritual factors sources of compassionate love. A similar recommendation can be made for probing the sources of unlimited love, but with the following caveat: Attention must be given to the sources of unlimited love as a distinctive and somewhat rare form of love. Its sources may build upon but yet differ from the sources of the more common but more limited forms of love now increasingly called compassionate love. Perhaps a variety of special strategies, such as those developed varieties of methodological agnosticism (Porpora, 2006), will be required to probe the distinctive sources of unlimited love.

*Priorities.* Are there any particular tasks or topics that should be regarded as top priorities for field development? This is a challenging question, because the top priority within a particular sub-area of UL research (e.g., one of the 8 topic categories) is a function of the relative abundance and sophistication of the components of the research process, especially measures, theories, and data (Figure 2). Some sub-areas may benefit most from collecting data based on newly or yet-to-be developed measures, whereas other sub-areas may benefit most from designing experiments to explore implications of Sorokin's (1954/2002) theories, or newly constructed theories (or the theory of compassion developed by Goetz et al., 2010; e.g., Jeffries, 2002).

Another consideration is the prospect of demonstrating that the UL construct contributes *added value* to a preexisting research area, above and beyond the added value that may be supplied by the related, more general construct of compassionate love. For this purpose, targeted area-specific reviews might be useful and necessary for identifying top area-specific priorities.

More generally, one might argue that each of the cross-cutting issues noted earlier should be regarded as a priority, although not uniformly applicable in every subfield. UL research needs continued measurement development that is directed feasibly and sensibly; ongoing conceptual refinement and terminological coordination; and continued data-collection, based on up-to-date measures and theories, on appropriate area-specific priority questions, as well as cross-cutting empirical topics.

One potentially generative approach might be to identify a set of core features or practices that previous philosophy, theology, and scientific theory suggest are likely to support and foster UL. Studying the confluence of these factors could facilitate measurement development as well as offer opportunities to study key outcomes of interest, such as holistic flourishing and physical health. Such a confluence of core features may be offered, for example, by Post's (2013) recently enunciated construct of the "ontological generality."<sup>29</sup> As Post has pointed out (personal communication, April 30, 2013), the ontological generality can be viewed as the intersection of two axes: (a) the *human* axis of love of neighbor and of self, and (b) the

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<sup>29</sup>As noted earlier, Post (2013) speaks of the "Ontological Generality" as the enactment of "a *communitas* of mutual love between God, self, and other" (p. 202).

*divine* axis, the love of God and love of self. IRUL’s first wave of research, along with other early IRUL activities (e.g., Post, 2007a) emphasized the human first axis. Much of that work, as shown in the present review, documented the benefits of neighbor love for those who give it, revealing how the appropriate forms of love of the self and the love of the neighbor are linked. And in a distinct but complementary line of work, since 2007 IRUL has emphasized the divine second axis, and how experience of God’s love can enliven the love of one’s neighbor and of one’s self. Together, the dynamic intersection of these axes points toward an image of human flourishing within the context of the three loves of God, of neighbor, and of self. The intersection of these axes also represents the triple love commandment that arguably constitutes the perennial theo-philosophy of life and purpose across a wide range of spiritual traditions.<sup>30</sup> In recent years, this has led to IRUL’s interest in recovery within the three love framework of the 12 Steps in Alcoholics Anonymous (AA), as well as within the broader context of the “Flame of Love” project.

In order to build on both its first-wave as well as its more recent research, IRUL could perhaps very naturally and helpfully pursue, for example, further inquiry into the benefits to an agent when both the human and divine axes of love come together in the life of the agent. Questions that could spawn fruitful scholarship as well as qualitative and quantitative empirical inquiry include: Is loving and serving others even more beneficial under the sacred canopy of the love for God and received from God? Is a person’s sense of God’s love enlivened and quickened experientially when he or she becomes devoted to contributing in creative love to the well-being of others? How do these two axes support and intensify one another when they are brought together? And if these axes are mutually supportive, can the resulting triadic love be regarded as an ultimate theo-philosophical truth that all traditions at their best teach and implement with varying degree of success? How do different traditions encourage this triadic love in practice, and sustain its extension to a wider humanity, rather than to some small fragment of humanity?

### **Strengths, Limitations, and Generalizability**

We have reviewed the results of studies funded by the first wave of IRUL-funded research on unlimited love. These studies provide important insights about UL-related topics, and suggest numerous future directions. The present review thus provides a snapshot of an emerging interdisciplinary field, and its findings reflect the field’s richness, diversity, best current efforts, current needs, opportunities, and future directions. The present review, however, does not represent an exhaustive survey of all scientific research on UL-related constructs, many of which have received considerable previous study (e.g., Davis, 1994). Nor did the present review examine all research guided by the concepts of the 1999 MIT conference on the heels of which “unlimited love” emerged as a scientific phrase, such as studies of “compassionate love” (Oman, 2010a, 2011).

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<sup>30</sup>As expressed by Jesus of Nazareth, this is the commandment, “Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind. This is the first and great commandment. And the second is like unto it, Thou shalt love thy neighbor as thyself. On these two commandments hang all the law and the prophets” (Matthew 22:37-40). The first half of the commandment emphasizes the divine love axis, and the second emphasizes the human love axis.

In the course of this review, we have noted a variety of similarities between these IRUL first-wave findings and the Fetzer compassionate love RFP findings. A broader issue of interest is whether several issues identified in this review – such as the presence of multiple sub-areas, the need to foster terminological and conceptual coordination in the face of disciplinary fragmentation, and the need for encouraging ongoing development of measures, may generalize to a wider set of research initiatives that are directed at exploring concepts or teachings from religious/spiritual wisdom traditions. For example, might the patterns observed here shed light on optimal strategies for developing scientific understanding of phenomena such as wisdom and spiritual transformation, each the focus of recent funding initiatives by the John Templeton Foundation (Ardelt, 2004; Koss-Chioino & Hefner, 2006; Smith, 2006b)? All of these topics – unlimited love, compassionate love, wisdom, and spiritual transformation – represent partly nonphysical phenomena that are challenging to measure and to theoretically understand. Perhaps all possess a prototype structure, as is claimed for many constructs related to spirituality and religion (Fehr & Sprecher, 2009; Oman, 2013). Diverse religious and spiritual wisdom traditions also espouse all these constructs as important for life, and as fostering numerous benefits for individuals and society. For all these constructs, religious and spiritual wisdom traditions are a source of hypotheses about antecedents, indicators, and consequences. It seems possible that their shared origins and features and may pose similar methodological challenges, perhaps addressable in part through analogous strategies, efforts, and structures of field development.

## **Conclusions**

This review examined outcomes from the first wave of research sponsored by the Institute for Research on Unlimited Love, encompassing findings from 39 peer-reviewed journal publications, numerous chapters and books, and various other impacts. Unlimited love remains a novel and complex construct, and much conceptual and empirical work remains to be done. A range of suggestions have been made for future research, including developing additional measures and methods, further tests of interventions, and studies of extraordinary exemplars. We hope that the evidence, perspectives, and suggestions offered in this review may provide some small help and encouragement to all of us pursuing the important and expanding work in this emerging field.

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## **Appendix A: Relation Between Unlimited Love and Compassionate Love**

The two most influential constructs to emerge from the 1999 MIT conference were compassionate love, as defined by Underwood (2002; 2008), and unlimited love, as defined by Post (Post, 2002, 2003b). The introductory section of the present report offers several perspectives on the relation between compassionate and unlimited love, suggesting that they are both other-regarding, can both be conceived as subsets of Sorokin's (1954/2002) space defined by 5-dimensions of love, and that unlimited and compassionate love also possess undeniable differences, with unlimited love being in many regards a rarer subtype of compassionate love (Table 1, Figure 1).

Another view of the relation between unlimited and compassionate love was offered by Oman (2010a, Appendix C), who identified several similarities between the two constructs. More specifically, he identified ways that each of Underwood's (2002; 2008) defining criteria for compassionate love were addressed within Post's (2003b) extensive theological and philosophical discussion of the nature of unlimited love. Oman (2010a, p. 4; 2011, pp. 946-947), summarized Underwood's criteria for compassionate love as:

1. *Valuing the other at a fundamental level.* "Some degree of respect for the other person is necessary... rather than pity.... To be pitied does not elevate us as human beings" (Underwood, 2008, p. 7).
2. *Free choice for the other.* Compassionate love reflects a free choice to love, rather than being primarily instinctually driven (or, of course, something coerced).
3. *Cognitively accurate understanding, to at least some degree, of the situation.* This includes understanding "something of the needs and feelings of the person to be loved, and what might be appropriate to truly enhance the other's well-being" (Underwood, 2008, p. 7).
4. *Response of the heart.* "Some sort of emotional engagement and understanding [seems] to be needed to love fully in an integrated way" (Underwood, 2008, p. 8).
5. *Openness and receptivity.* An open attitude "allows one to see opportunities for the expression of compassionate love in specific situations" (Underwood, 2002, p. 73). "Specifically religious inspiration is not a necessary component... [but] the definition needs to leave room for this kind of divine input or open receptive quality" (Underwood, 2008, p. 8).

Oman (2010a) then argued that Post (2003b) represents a useful resource for philosophically contextualizing Underwood's (2002) criteria, since Post discussed issues relating to each criterion. Regarding these criteria, Oman (2010a, Appendix C) observed that in an analogue to Underwood's (2008) first criterion, paraphrased above, Post (2003b) noted that "love... always affirms the value of... others, but it will not affirm hatreds and harmful actions" (p. 6; criterion #1). With regard to criteria #2 and #4, Post (2003b) noted that in love, "our whole being, spirit and flesh, is involved: cognitive acts, feelings and affection, freedom, bodily reaction – all these are influencing each other.... [where by freedom is meant the] power of self-determination by choice which is not determined by any condition or cause whether extrinsic to the agent or... extrinsic to the act of choosing" (p. 44, quoting Toner). Furthermore, love "is characterized as affection for another that is free of egoistic motivation" (p. 33; relates to criterion #2). In addition, "any person who wishes to live a life of love must become competent

to achieve fitting goals.... True lovers... pursue learning objectives that are deemed necessary to serve others well” (pp. 153-154; criterion #3). “Emotions, which are clearly present in nonhuman animals... are the seat of our capacities to love [and] other-regarding love surpasses anything that reason alone has to offer with regard to the care of others” (p. 104; criterion #4). “We encounter astounding examples of unselfish human love and sacrifice, suggesting either that our capacity for love is much greater than we might imagine, or that we can be lifted up”; Post’s opinion is that “there are important continuities to be noted, and that grace works both with and against nature... human nature is not entirely recalcitrant to Unlimited Love” (pp. 11, 112; criterion #5).

Oman (2010a) concluded by suggesting “two core questions that may potentially be useful for operationalizing the alter-centric core of CL” (p. 89):

- A. Engagement. Is *sincere engagement with another’s well-being* (e.g., other-engagement) part of the phenomenon of interest? How and to what extent is this ensured?
- B. Autonomy. If so, is this engagement *at least partially autonomous from self-seeking* (e.g., does it go beyond other-engagement, to attain some degree of other-centeredness)? How and to what extent is such autonomy ensured?

## **Appendix B: Books Supported by IRUL (Empirical First Wave and Beyond)**

This appendix is based on a list of IRUL-supported books sent by Stephen G. Post (May 2, 2013). An earlier version has been available at IRUL's website (listed as having been updated on December 31, 2011): [http://www.unlimitedloveinstitute.org/publications/pdf/Institute\\_Books\\_Published.pdf](http://www.unlimitedloveinstitute.org/publications/pdf/Institute_Books_Published.pdf) Whereas most of the foregoing review was focused on books, journals, and other publications produced by first-wave empirical studies supported by IRUL (empirical projects begun through 2006), this appendix also lists outputs from scholarship beyond empirical science, as well as scientific projects begun after IRUL refocused its activities in 2007. Across 8 categories, the number of unique IRUL-supported books listed here is 79.

### **Single Author Books by Principal Investigator S.G. Post (n = 6)**

Matthew T. Lee, Margaret M. Poloma & S.G. Post, *The Heart of Religion: Experiencing God's Love, Spiritual Empowerment and Altruism* (New York: Oxford University Press, in preparation).

S.G. Post, *The Hidden Gifts of Helping: How the Power of Giving, Compassion, and Hope Gets Us Through Hard Times* (San Francisco: Jossey-Bass, a Wiley imprint, 2011). [*Wall Street Journal Best Seller, May 2011*]

S.G. Post and Jill Neimark. *Its Good to Be Good: How Daily Giving is the Key to Health, Happiness and a Longer Life* (New York: Random House/Doubleday-Broadway Books, 2007). This book took two years to write. It advances the scientific connection between unselfish love, happiness, spirituality and health. It contains new IRUL science, engaging stories, theological ideas, and "how to" exercises. All costs were handled by Dr. Post directly via advance from Broadway Books. A major website/blog domain was created ([www.whygoodthingshappen.com](http://www.whygoodthingshappen.com)) and developed, also out of pocket, by Dr. Post. The book includes a *Foreword* by Pastor Otis Moss, Jr.

As of June 2011, this book has sold a total of 40,200 copies in English. *WGTHGP* was translated and published in Japan, Brazil, Russia, Portugal, India, Sweden, Indonesia and Taiwan.

S.G. Post, *Human Nature and the Freedom of Public Religious Expression* (Notre Dame, Indiana: University of Notre Dame Press, 2003). [Selected as a "2005 Book of Distinction" by publishers in the U.S. and U.K.; "Outstanding University Press Book" by the Public Library Association & American Association of School Librarians, 2004; Book of the Year Award Finalist, Foreword Magazine 2004; Awarded "Editor's Choice" in *Research News & Opportunities in Science and Theology*, October 2003.]

This book includes *major sections on agape love* as the crucial expression of spirituality and religion in society. Most of this book was completed in 1999 and 2000 with a special small grant from the Templeton Foundation via the Becket Institute at Oxford.

S.G. Post, *Unlimited Love: Altruism, Compassion, and Service* (Philadelphia: Templeton Foundation Press, 2003). [Selected as a "2004 Book of Distinction in Science and Religion," by publishers in the U.S. and the U.K.] This book was written not so much to be *magnum opus*, but

rather to serve widely as an introduction to the work of the Institute. It has served that purpose well, and is often cited.

S.G. Post, *More Lasting Unions: Christianity, the Family, and Society (Series on Religion and the Family Edited by Don S. Browning)* (Grand Rapids, Mi.: Wm. B. Eerdmans, 2000). Dr. Post finished this book just as IRUL was being conceived. Throughout, the book focuses on the science and theology of love within the context of the family.

### **Edited Books by PI S.G. Post (n = 8)**

Jeff Levin and S.G. Post, eds., *Divine Love: Perspectives from the World's Religions*. “Foreword” by Seyyed Hossein Nasr (Philadelphia: The Templeton Press, 2010).

Michael A. Edwards and S.G. Post, eds., *The Love That Does Justice* (Cleveland: Unlimited Love Press, 2008). This book was supported by a grant from the Seasons Fund and Ford Foundation, based on a conference. It is available at [www.unlimitedloveinstitute/lovejustice.org](http://www.unlimitedloveinstitute/lovejustice.org).

S.G. Post, ed., *Altruism and Health: An Empirical Perspective* (New York: Oxford University Press, 2007). This book includes chapters by 23 premier scientists and theologians, breaking completely new ground in connecting the health benefits of giving with group selection theory in evolution, and with *Why Good Things Happen to Good People*, which refers to a number of the major new research studies contained in this Oxford collection.

S.G. Post and Robert H. Binstock, eds., *The Fountain of Youth: Cultural, Scientific, and Ethical Perspectives on a Biomedical Goal* (New York: Oxford University Press, 2004). This was a special project developed in conjunction with Dr. Harper’s conference. The book pertains directly to unlimited love because in various chapters, authors argue that with regard to human enhancement, the central thrust must be growth in unlimited love rather than in biotechnological innovations. Love is posited as the only credible form of enhancement.

S.G. Post, Byron R. Johnson, Michael E. McCullough, Jeffrey P. Schloss, eds., *Altruism and Love: An Annotated Bibliography of Major Studies in Psychology, Sociology, Evolutionary Biology, and Theology* (Philadelphia: Templeton Foundation Press, 2003). This book was developed to further fulfill the Harper plan, which called for a major annotated bibliography.

S.G. Post, Lynn G. Underwood, Jeffrey P. Schloss, William B. Hurlbut, eds., *Altruism and Altruistic Love: Science, Philosophy, and Religion in Dialogue* (New York: Oxford University Press, 2002). [Selected for “books of Distinction in Science and Religion,” 2003.] This book is often cited as one of the better collections of scientific and theological statements on altruistic love. It emerged after a full year of working with selected presenters from the 1999 conference *Empathy, Altruism and Agape*, convened by the Templeton Foundation and the Fetzer Institute. The conference was chaired by Drs. Post and Lynn G. Underwood, with the assistance of Drs. Jeffrey Schloss and William Hurlbut.

John Wall, Don S. Browning, William Doherty, S.G. Post, eds., *Marriage, Health, and the Professions: If Marriage is Good for You, What Does This Mean for Law, Medicine, Ministry, Therapy, and Business* (Grand Rapids, Mi: Wm. B. Eerdmans, 2002). This is a book about married love and benevolence, breaking new ground in the epidemiology of more lasting unions. It was supported in part by the Lilly Foundation.

S.G. Post, “Introduction,” Pitirim A. Sorokin, *The Ways and Power of Love: Types, Factors, and Techniques of Moral Transformation* (Philadelphia: Templeton Foundation Press, 2002). This key work on love at the interface of science and religion has had immense impact since its republication.

### **Single Author Books by IRUL Investigators (n = 24)**

Christopher Boehm, *Moral Origins: The Evolution of Virtue, Altruism and Shame* (New York: Basic Books, 2012).

Bruce Brander, *Love That Works: The Art and Science of Giving* (Philadelphia: Templeton Press, 2004).

Courtney Cowart, *An American Awakening: From Ground Zero to Katrina – The People We Are Free to Be* (New York: Seabury Press, 2008).

Michele Dillon and Paul Wink, *In the Course of a Lifetime: Tracing Religious Belief, Practice, and Change* (Berkeley, Ca: University of California Press, 2007)

Thomas Dixon, *The Invention of Altruism: Making Moral Meanings in Victorian Britain* [A British Academy Postdoctoral Fellowship Monograph] (London: Oxford University Press, 2008).

Andrew Flescher, *Four Models of Moral Evil* (Washington, DC: Georgetown University Press, in press)

Andrew Flescher and Daniel Worthen, *The Altruistic Species: Scientific, Philosophical, and Religious Perspectives on Human Benevolence* (Philadelphia: Templeton Press, 2007). These authors won a university course award from IRUL, and attended the awardee’s conference at the Claremont School of Theology.

Gregory L. Fricchione, *Compassion and Healing in Medicine and Society: On the Nature and Use of Attachment Solutions to Separation Challenges* (Baltimore, MD: The Johns Hopkins University Press, 2011).

Byron R. Johnson, *More God, Less Crime: Why Faith Matters and How It Could Matter More*. “Foreword” by Arthur C. Brooks (Philadelphia: Templeton Press, 2011).

Bill Kramer, *Unexpected Grace: Stories of Faith, Science, and Altruism* (Philadelphia: Templeton Press, 2007). Kramer worked closely with IRUL-funded scientists, including site

visits, interviews with PIs and subjects. A nationally distinguished writer and journalist, Bill writing a full volume based on interviews with IRUL-funded researchers, in which he will examine their motives in studying unlimited love as scientists. This is, in effect, an example of IRUL attempting to follow the pattern of *Science and Spiritual Quest*, a Templeton Foundation project in which scientists disclose and reflect on their religious beliefs. Mr. Kramer devoted an entire year to this project, and travel widely to the research locations IRUL was supporting.

Samuel P. Oliner with Piotr Olaf Zylicz, *Altruism, Intergroup Apology, Forgiveness, and Reconciliation* (St. Paul, MN: Paragon House, 2008).

Samuel P. Oliner, *The Nature of Good and Evil: Understanding the Many Acts of Moral and Immoral Behavior* (St. Paul, MN: Paragon House, 2011).

Thomas J. Oord, *The Science of Love* (Philadelphia: Templeton Press, 2004).

Thomas J. Oord, *Defining Love: A Philosophical, Scientific, and Theological Engagement* (Grand Rapids, MI: Brazos, 2010).

Michael E. McCullough, *Beyond Revenge: The Evolution of the Forgiveness Instinct* (San Francisco: Jossey-Bass, 2008).

Margaret M. Poloma, *Main Street Mystics: The Toronto Blessing & Reviving Pentecostalism* (New York: Rowman & Littlefield, 2003).

Margaret M. Poloma and Ralph W. Hood, Jr., *Blood and Fire: Godly Love in a Pentecostal Emerging Church* (New York: New York University Press, 2008).

Margaret M. Poloma and John C. Green, *The Assemblies of God: Godly Love and the Revitalization of American Pentecostalism* (New York: New York University Press, 2010).

Kevin S. Reimer, *Living L'Arche: Stories of Compassion, Love and Disability* (Grand Rapids, MI: Wm. B. Eerdmans, 2009).

Jeffrey P. Schloss, *The Matter of Love: Evolution, Religion, and the Embodiment of Altruism* (in preparation).

Jan Thrope, *Inner Visions: Grassroots Stories of Truth and Hope* (Wilmington, OH: Orange Frazier Press, 2011).

George Vaillant, *Spiritual Evolution: A Scientific Defense of Faith* (New York: Random House-Broadway, 2008).

David Sloan Wilson, *The Neighborhood Project: Using Evolution to Improve My City, One Block at a Time* (New York: Little, Brown & Co., 2011).

Robert Wuthnow, *Saving America? Faith-Based Services and the Future of Civil Society* (Princeton, NJ: Princeton University Press, 2004).

**Reference Works (n = 2)**

Stephen G. Post, ed., *Encyclopedia of Bioethics, 5 vols.* (New York: Macmillan Reference, 2004).

Yuhudit Greenberg, ed., *Encyclopedia of Love in World Religions, 2 vols.* (Santa Barbara, Ca: ABC-CLIO Reference, 2008). Dr. Greenberg, one of the premier religious thinkers on love, came to our Villanova conference in 2002 and we discussed the need for an encyclopedia on this topic. Dr. Post assisted her with navigating the reference publishers, and encouraged this major encyclopedia. She has succeeded, and with one of the major reference publishing houses.

**Edited Books by IRUL Investigators (n = 10)**

Douglas A. Vakoch, ed., *Altruism in Cross-Cultural Perspective* (Springer, 2013). This will appear in the International and Cultural Psychology Series, based on a conference IRUL sponsored in 2005 with the Society for Cross-Cultural Research.

Craig A. Boyd, ed., *Visions of Agape: Nature and Grace* (London: Ashgate Publishing, 2008). This is another outcome of the 2004 Summer Institute at Calvin College. Dr. Boyd was Professor of Integration for Science and Theology at Azusa Pacific University.

Patrick M. Brennan, ed., *The Vocation of the Child* (Grand Rapids, Mi: Wm. B. Eerdmans, 2008). This book examines how children can be raised to practice *agape* love. It includes all major theologians and social scientists working on the “best love of the child,” which is to nurture *agape* in that child. This is based at Emory University via an IRUL match with the Center for Religion and Law.

Timothy P. Jackson, ed., *The Morality of Adoption: Social-Psychological, Theological, and Legal Perspectives*. Grand Rapids, MI: Wm. B. Eerdmans, 2005. This book emerged from an IRUL-Emory conference/roundtable based on Dr. Post’s contributions to the theology of adoption debate in the mid-1990s. There was also a special working group conference and public panel presentation at Emory.

Timothy P. Jackson, ed., *The Best Love of the Child: Being Loved and Being Taught to Love as the First Human Right* (Grand Rapids, Mi: Wm. B. Eerdmans, 2011). This book also emerged from an IRUL-Emory conference/roundtable.

Jacob Neusner and Brice Chilton, eds., *Altruism in the World Religions* (Washington, D.C.: Georgetown University Press, 2005). This book that emerged from the Bard College forums in which scholars from the major religious traditions made in inventory of the place of Unlimited love in scriptures and theologies. Of special interest is that the volume clearly distinguishes “altruism” as bringing negative or neutral benefit to the agent from all religious concepts of love, in which love is a blessing to the agent. This entire project included:

- \*a major three-day conference at Bard with contributing scholars open to the public
- \*courses on unlimited love across-the-curriculum at Bard College for a full semester
- \*the book author stipends

Jacob Neusner and Bruce Chilton, eds., *Religious Tolerance in World Religions* (Philadelphia: Templeton Press, 2008). This project also included a conference and courses at Bard College.

Jacob Neusner and Bruce Chilton, eds., *The Golden Rule: Analytical Perspectives* (Lanham, Md: University Press of America, 2009). This project included a conference and courses at Bard.

Thomas J. Oord, ed., *The Many Facets of Love: Philosophical Explorations* (Newcastle, UK: Cambridge Scholars Publishing, 2007).

Thomas J. Oord, *The Altruism Reader: Selections from Writings on Love, Religion, and Science* (Philadelphia: Templeton Press, 2008). This emerges from the IRUL university level course competition program conference at Claremont School of Theology in March 2005.

### **Special Edited Journals Devoted to “Unlimited Love” (n = 3)**

*Journal of Biblioteca Javier Coy de Estudios Norteamericanos*, Vol. 88, 2006. [Reprinted in *Integralism, Altruism and Reconstruction: Essays in Honor of Pitirim A. Sorokin*, ed. by Elvira del Pozo. Valencia, Spain: Universitat de Valencia, 2006.]

The editor of this volume of Spain’s most prestigious sociology of religion journal, Elvira del Pozo, was inspired to devote the volume to the work of unlimited love in relation to Sorokin’s book, *The Ways and Power of Love*, which the Templeton Foundation Press reprinted in 2002. The collection of articles/chapters brings together leading experts on love, altruism and Sorokin, including: Jay Weinstein, "Altruism as a Tool for Applied Sociology: Realizing Sorokin's Legacy"; Barry Johnston, "Altruism and Emancipation: Sorokin and the Franfort School"; Vince Jeffries, "Integralism and Love"; Samuel Oliner, "Sorokin's contribution to American Sociology"; Stephen Post, "Sorokin and the Measure of Altruistic Love"; Larry Nichols; Pepe Beltrán; Elvira del Pozo; S.G. Post.

The book was the basis of a small but major unlimited love conference convened in Spain at the prestigious Universidad de Valencia.

*Journal of Psychology and Theology: Special Issue – Love, Psychology, and Theology*, Spring 2006, Vol. 34, No. 1.

The volume was edited by Alan Tjeltveit, Professor of Psychology at Muhlenberg College in Pennsylvania, who was one of the participants in the IRUL *Works of Love Seminar* convened at Calvin College in the summer of 2004. Dr. Tjeltveit won one of our IRUL article awards for publishing his piece originally presented at the Works of Love conference in Villanova in June 2003. This journal is considered a major venue in Christian evangelical dialogue between science and theology. The emphasis of the special issue is on developing a theologically- and scientifically-informed psychology of love of God and love of neighbor-as-self.

*Humboldt Journal of Social Relation: Special Issue – Altruism, Intergroup Apology and Forgiveness as Antidote for a Divided World*, Vol. 29, No. 2, 2005.

Edited by Samuel Oliner, who was funded for IRUL research, this volume brings together 8 distinguished researchers on unlimited love.

**Books (single author and edited) Funded by the Flame of Love/IRUL Project’s Competitive Awards Process (n = 11 but only 9 toward total)**

Paul Alexander, ed., *Christ at the Checkpoint: Theology in the Service of Justice and Peace* (Eugene, OR: Pickwick, 2012).

Candy Gunther Brown. *Testing Prayer: Science and Healing* (Cambridge, MA: Harvard University Press, 2012).

Candy Gunther Brown. *What Your Alternative Medicine Provider Never Told You (And You Didn’t Know to Ask)*. (Under Review).

Candy Gunther Brown, ed., *Global Pentecostal and Charismatic Healing* (New York: Oxford University Press, 2011).

\*Matthew T. Lee, Margaret M. Poloma, and Stephen G. Post. *The Heart of Religion* (New York: Oxford University Press, 2012).

Matthew T. Lee and Margaret M. Poloma, *A Sociological Study of the Great Commandment in Pentecostalism: The Practice of Godly Love as Benevolent Service*, “Foreword” by Stephen G. Post (Lewiston, NY: The Edwin Mellen Press, 2009).

Matthew T. Lee and Amos Yong, eds., *The Science and Theology of Godly Love* (DeKalb, IL: Northern Illinois University Press, 2012).

Matthew T. Lee and Amos Yong, eds., *Godly Love: Impediments and Possibilities* (Lanham, MD: Lexington Books, 2012).

\*Margaret M. Poloma and John C. Green. *The Assemblies of God: Godly Love and the Revitalization of American Pentecostalism* (New York: New York University Press, 2010).

Michael Wilkinson and Peter Althouse, *The Father’s Love: Soaking Prayer and Charismatic Renewal* (under review with Oxford University Press).

Amos Yong. *God is Spirit, God is Love: Love as the Gift of the Spirit* (Waco, TX: Baylor University Press, 2012).

**Books (single author and edited) Funded by the Pursuit of Happiness (Scientific, Theological, and Interdisciplinary Study on the Love of God, neighbor, and Self/IRUL Project’s Awards Process (n = 17)**

A principal aim of this project was to foster more holistic and realistic public, if not popular, understandings of the meanings of “life, liberty, and the pursuit of happiness” in all its varieties.

We pursued this aim in part through the production of 19 new books, more than 100 new articles and essays, a series of public lectures, six new courses, and a major international conference on interreligious understandings of happiness.

After a series of 7 roundtable conferences, and 70 public lectures, the project culminated with the “Interfaith Summit on Happiness,” held October 16-17, 2010 on the Emory campus. The conference included a series of public presentations and conversations on happiness and well being in comparative confessional and professional perspective.

Julia Annas, *Intelligent Practical Virtue* (Oxford University Press, forthcoming).

April L. Bogle, ed., *The Pursuit of Happiness in Interreligious Perspective* (forthcoming).

John Bowlin, *Counting Virtues: The Difference that Transcendence Makes* (Oxford University Press, forthcoming).

Kathleen Ann Brady, *Religious Freedom and the Pursuit of Holiness* (Cambridge University Press, forthcoming).

Don S. Browning and John Witte, Jr., *From Private Order to Public Covenant: What Place for Christian Marriage in Modern Marriage Law?* (Cambridge University Press, forthcoming).

Michael J. Broyde, *Innovation in Jewish Law and Religious Life* (Urim Publishing House, 2010).

Sidney Callahan, *Becoming Happy, Becoming Good* (Orbis Books, 2011).

Ellen Charry, *God and the Art of Happiness* (William B. Eerdmans Publishing Co., 2010).

Richard W. Garnett, *The Jurisprudence of Religious Freedom: Religious Organizations and their Place in a Well Ordered Society* (Cambridge University Press, forthcoming).

Eric Gregory, *What Do We Owe Strangers? Globalization and the Good Samaritan* (under consideration at the University of Chicago Press).

Vigen Guroian, *Christian Marriage and Family at Bay: An Orthodox Assessment* (Oxford University Press, forthcoming).

Timothy P. Jackson, *Political Agape: A Defense of Prophetic Liberalism* (under consideration at the University of Chicago Press).

Ira C. Lupu and Robert W. Tuttle, *Secular Government, Religious People* (William B. Eerdmans Publishing Company, forthcoming).

Stephen Pope, *Fullness of Life: The Science of Well-Being and the Ethics of Virtue* (Georgetown University Press, forthcoming).

\*Stephen Post, *The Hidden Gifts of Helping: How the Power of Giving, Compassion, and Hope Can Get Us Through Hard Times* (Jossey-Bass, 2011)

Philip L. Reynolds, *Thomas Aquinas and the Ethics of Hope: A Study of Christian Eudaimonism* (forthcoming).

Brent Strawn, ed., *The Bible and the Pursuit of Happiness* (Oxford University Press, forthcoming).

\*= previously counted and therefore only included as one count in total number