The Empirical Basis for Gottman Method Therapy

In the Gottman scientific research there were three phases.

**Phase 1: The discovery of reliable patterns of interaction discriminating the “masters” from the “disasters” of relationships.**

The first phase of John Gottman’s research was devoted to the discovery of reliable patterns in observational data. In the research with couples we needed to see if there were indeed patterns of behavior, or sequences of interactions that could discriminate happy from unhappy couples. It was not at all clear that these patterns existed. John Gottman and Roger Bakeman (using Jim Sackett’s ideas) began developing the math for sequential analysis, which now is a well developed methodology. They began discovering consistent sequences that differentiated happily married from unhappily married couples. Gottman wrote about this work in a book called *Marital Interactions: Experimental Investigations* (Academic Press, 1979).

Research on couples had begun in 1938 with the publication of a book by Louis Terman. They had interviewed couples and given them questionnaires, but systematic observation of couples only started in the 1970s in Gottman’s lab and a few others around the USA. Psychology at that time was having a great deal of difficulty establishing reliable patterns in the personality of one individual. State of the art advice was that psychologists should not study couples, because the unreliability in studying one person might be squared in studying two people. That advice was wrong. There was tremendous regularity in a couple over time.

The Gottman lab discovered these interaction patterns (using an observational coding system that scored videotapes that we called the Couples’ Interaction Scoring System, or CISS) first in a published study of couples with a University student population. Later, a grad student of Gottman’s, Mary Ellen Rubin, for her dissertation repeated the same experiment with couples in rural Indiana. Amazingly, the CISS numbers in the two studies differed only in the second decimal place.

In a series of research studies Gottman developed new observational coding systems with Gottman’s student Cliff Notarius, and the lab applied brand new methods for studying sequences of interaction developed by Jim Sackett and Roger Bakeman for examining sequences of interaction. Following Thibaut and Kelley’s 1959 book *The Social Psychology of Groups*, Gottman built a device called a “talk table,” in which people could interact and also rate how positive or negative their intentions were and how positive or negative were the impacts of the messages they received. This was the first application of game theory to couples’ interaction.

The Gottman lab used these methods to define reliable patterns of interaction and thought during conflict. Following a series of peer-reviewed journal articles, in 1979 Gottman published these results in a series of scientific papers and a book called *Marital interaction: Experimental investigations* (NY: Academic Press).
Phase 2: Prediction and the Replication of the Prediction

The second phase of the Gottman research program was devoted to trying to replicate these findings and focused on prediction. Prediction in psychology means being able to predict important outcomes from the patterns observed. That phase was also effective. The patterns and sequences we observed were able to discriminate happy from unhappy couples in repeated studies.

In 1976, Robert Levenson and John Gottman teamed up to combine the study of emotion with psycho-physiological measurement and a video-recall method that gave us rating dial measures (still applying game theory) of how people felt during conflict. That was the new way of getting the “talk table’ numbers. The research also became longitudinal. They made no predictions in the first study, but they were interested in a measure of “physiological linkage,” because a prior study showed that the skin conductance of two nurses was correlated only if they disliked one another. They thought that might be linked to negative affect in couples. Indeed it was.

They were also amazed that in their first study with 30 couples they were able to “predict” the change in marital satisfaction almost perfectly with our physiological measures. “Time 2” was 3 years later than “Time 1.” The correlations were very high with Time-2 marital satisfaction (from the .70s to the 90s), controlling for Time-1 marital satisfaction. The results were that the more physiologically aroused couples were in all channels (heart rate, skin conductance, gross motor activity, and blood velocity) the more their marriages deteriorated in happiness over a three-year period, even controlling the initial level of marital satisfaction). The rating dial and their observational coding of the interaction also “predicted” changes in relationship satisfaction. They had never seen such large correlations in their data. Furthermore, they had preceded the conflict conversation with a reunion conversation in which couples talked about the events of their day before the conflict discussion, and they had followed the conflict discussion with a positive topic. What was amazing was that harsh startup by women in the conflict discussion was predictable by the male partner’s disinterest or irritability in the events of the day discussion. They had then discovered that the quality of the couple’s friendship, especially as maintained by men, was critical in understanding conflict. Furthermore, the ability to rebound from conflict to the positive conversation became a marker of emotion-regulation ability of couples.

Both Robert Levenson and John Gottman had discovered Paul Ekman and Wallace Friesen’s Facial Affect Coding System (FACS), and Gottman subsequently developed the Specific Affect Coding System (SPAFF), which was an integration of FACS and earlier systems in the Gottman lab. The SPAFF became the main system that Gottman used to code couples’ interaction. At first it took 25 hours to code 15 minutes of interaction, but later Gottman was able to get the same coding done in just 45 minutes, with no loss of reliability.
Gottman also began applying time-series analysis to the analysis of interaction data. He wrote a book on time-series analysis to explain these methods to psychologists, and developed some new methods for analyzing dominance and bi-directionality with James Ringland. To create these time series from observational data, Gottman summed SPAFF codes in 6-second blocks using weights in terms of the ability of the codes to predict divorce (for example, because they were such good predictors of stability or divorce, contempt got a weight of -4, and humor a weight of +4, while anger and sadness were weighted only -1). Gottman and Levenson then got their first grant together and began attempting to replicate our observations from the first study. The subsequent studies that they conducted in their labs (some with colleagues Laura Carstensen, with Lynn Katz, with Sybil Carrere, and with Neil Jacobson) eventually spanned the entire life course (from a study following newlyweds through the transition to parenthood, through a study of two groups of couples at Berkeley in the Levenson lab on the transition through retirement; the old couples’ study involved following couples for 20 years – in Levenson’s Berkeley lab).

The Gottman lab at the University of Illinois also studied the linkages between marital interaction, parenting, and children’s social development (with Lynn Katz), and later at the University of Washington involved studying these linkages with infants (with Alyson Shapiro). Gottman began studying families, at first examining children from age 3 longitudinally up to age 15. Gottman developed the concept of Meta-Emotion, which is how people feel about emotion, specific emotions (like anger) and emotional expression and emotional understanding in general. Meta-emotion mismatches between parents in that study predicted divorce with 80% accuracy.

The idea of emotion coaching emerged from that research, which was a scientific validation of the work of child psychologist Haim Ginott. In a newlywed study Gottman began studying the transition to parenthood and learning how to do research on babies and parents.

Gottman and Levenson discovered that couples interaction had enormous stability over time (about 80% stability in conflict discussions separated by 3 years). They also discovered that most relationship problems (69%) never get resolved but are “perpetual” problems based on personality differences between partners. That was discovered by seeing couples in the lab every 3 years, then every 6 years, and so on.

In seven longitudinal studies, one with violent couples (with Neil Jacobson), the predictions replicated. We could predict whether a couple would divorce with an average of over 90% accuracy, across studies using the ratio of positive to negative SPAFF codes, the Four Horsemen of the Apocalypse (Criticism, Defensiveness, Contempt, and Stonewalling), physiology, the rating dial, and an interview we devised, the Oral History Interview, as coded by Kim Buehlman’s coding system. We could predict whether or not our stable couples would be happy or unhappy using measures of positive affect during conflict, which Jim Coan and Gottman discovered was used not randomly but to physiologically soothe the partner. We also discovered that men accepting influence from women was predictive of happy and stable marriages. Bob Levenson also discovered that
humor was physiologically soothing, that empathy had a physiological substrate (with Anna Ruef) using our rating dial.

Jacobson and Gottman collaborated in a basic study of domestic violence with 4 groups of couples: (1) happily married, nonviolent, (2) unhappily married, nonviolent, (3) situationally violent couples, and (4) characterologically violent men. We discovered a typology of battering that has mostly been replicated in the literature.

Gottman in 1986 built an apartment laboratory at the University of Washington and John’s student Janice Driver took a decade (first as a volunteer and then a doctoral student) discovering the basis of friendship and intimacy and its relation to conflict in their Bids and Turning Coding System. With that work the discovered how couples create and maintain friendship and intimacy and how it was related to conflict. For example, newlyweds who divorced 6 years after the wedding had turned toward bids 33% of the time, while newlyweds who stayed married 6 years after the wedding had turned toward bids 86% of the time. The idea of the friendship “emotional bank account” was verified. It was related to repair of negativity, and, amazingly to the quality of sexual intimacy.

When 14-year longitudinal data became available Levenson & Gottman discovered a second dysfunctional pattern, emotional disengagement. It was marked by the absence of positive affect during conflict (no interest, affection, humor, or empathy). Now they could predict not only if a couple would divorce, but when. Couples who had the Four Horsemen divorced an average of 5.6 years after the wedding, while emotionally disengaged couples divorced an average of 16.2 years after the wedding. That was a very new finding.

Levenson, Carstensen, and Gottman began studying marriage in later life with two groups of couples in the Bay Area, one in their 40s and one in their 60s. Thanks to Levenson’s tenacity that has turned out to be a 20-year longitudinal study that his lab is now finishing.

Levenson and Gottman also conducted a 12-year study of gay and lesbian couples, work they published in two papers in the Journal of Homosexuality. Patterns replicated across the life course, and they replicated for gay and lesbian couples as well.

**Phase 3: Theory Building, Understanding, and Prevention & Intervention**

The third phase of the Gottman research was devoted to **trying to understand** the empirical predictions, and thus **building and then testing theory**. The idea here is to build a theory that is testable, or disconfirmable. That is the hallmark of good science.

Testing theory in our field requires clinical interventions. The Gottman lab returned to intervention research 17 years ago (in 1996) with Dr. Julie Schwartz Gottman. They designed both proximal and distal change studies. In a proximal change study, one intervenes briefly with interventions designed only to make the 2nd of two conflict discussions less divorce prone. In one of these studies we discovered that a 20-minute
break in which couples stopped talking and just reading magazines (as their heart rates returned to baseline) dramatically changed the discussion so that people had access to their sense of humor and affection.

With Gottman’s wife, Dr. Julie Schwartz Gottman, the Gottmans started by building the *Sound Relationship House Theory*. That theory became the basis of the design of clinical interventions for couples in Gottman’s book *The Marriage Clinic*, and Julie’s book, *The Marriage Clinic Casebook*. Julie and John Gottman built The Gottman Institute in August 1996.

At the same time, as part of theory building, the world-class award-winning mathematical biologist James Murray and his students and Gottman began working on building a mathematical model of relationships, which led eventually to the publication of *The Mathematics of Marriage* (2002, MIT Press). This math created nonlinear difference and differential equations of actual couple interactions, which was a fulfillment of von Bertalanffy’s classic book *General System Theory* a book that started family systems therapy in the 1960s. These nonlinear equations made it possible to simulate a couple’s interaction under new conditions and then test these simulations with real experiments. The equations represent a new language for analyzing and understanding couple interactions. A recent book by John Gottman titled *Principia Amoris: The new science of love* (2015, NY: Routledge) discussed this modeling and applied it to couples’ therapy.

It is important to note that Gottman-Method couples’ therapy and the Sound Relationship House Theory was built upon this basic scientific research, and the theory emerged from that basic research. Gottman-Method therapy is not a “school of therapy,” but a work in progress that should always be based on solid empiricism. The Sound Relationship House Theory is designed to be totally disconfirmable, subject to empirical testing. Its assumptions are clearly spelled out in the Gottmans’ Level I training for clinicians. Over time, it will no doubt be modified, as the therapy is made more effective by empirical self-examination. The theory has already been modified as a result of more research.

**Transition to Parenthood: Prevention**

The Gottmans first began testing their interventions by exploring what happened to a couple when the first baby arrived. In this longitudinal study they began studying young couples in first marriages a few months after their wedding, following couples into pregnancy and studying parent-infant interaction using the Lausanne Triadic Play paradigm. They discovered that 67% of couples experienced a precipitous decline in relationship satisfaction in the first 3 years of the baby’s life. Gottman’s student Alyson Shapiro compared the 33% of couples who did not experience the downturn in satisfaction with the 67% who did. This is the same method of comparing the masters to the disasters and designing the therapy empirically. They studied them even a few months after their wedding, and during pregnancy as well. They developed the Pregnancy Oral History Interview. The predictions of the baby’s temperament from the last trimester of
pregnancy was impressive, done by Gottman’s student, Eun Young Nahm. Furthermore, Alyson Shapiro’s thesis showed that they could predict the baby’s vagal tone, how much the baby laughed and cried at 3 months from the way the couple discussed a conflict in their last trimester. Again, based on the differences between the “masters” of relationships and the “disasters” of relationships, John and Julie Gottman designed a couples’ workshop and a couples’ therapy. Based on the comparison of the couples who declined and did not decline in relationship satisfaction after baby, we designed the highly effective “Bringing Baby Home” (BBH) workshop. They performed a randomized clinical trial study with long-term follow up. That workshop has now been taught to 1,000 birth educators from 24 countries. The effects have been replicated in Australia and Iceland. References follow.

First the basic research:


Then the preventive intervention:


Gottman, John; Gottman, Julie; Shapiro, Alyson A new couples approach to interventions for the transition to parenthood. (2010). In Schulz, Marc S. (Ed); Pruett, Marsha Kline (Ed); Kerig, Patricia K. (Ed); Parke, Ross D. (Ed), *Strengthening couple relationships for optimal child development: Lessons from research and intervention. Decade of behavior (science conference)*, (pp. 165-179). Washington, DC, US: American Psychological Association.


Emotion Coaching

Second, the Gottmans turned to the emotion-coaching intervention (described in Gottman and DeClaire’s *Raising an Emotionally Intelligent Child*). That intervention has been evaluated in 3 randomized clinical trials by Australian psychologist Sophie Havighurst, and has also been found effective in a study in South Korea led by certified Gottman therapist Dr. Christina Choi both in 2 orphanages in Seoul and in Busan.
Emotion coaching is now being taught to teachers throughout South Korea. For Havighurst’s papers and programs, see her website tuningintokids.org.au. Research and training is also taking place in the UK on emotion coaching. See references below.

First the basic research:


Then the intervention research:


Work on emotion coaching in the UK:

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The master/disaster comparisons and analyses across the Gottmans’ studies have led to what has come to be called “Gottman Method Couples’ Therapy.” A randomized clinical trial of a 2-day workshop (with follow up) that is a dismantling study has been published in the Journal of Family Therapy.


A second study examining the effects of 9 added sessions of couples’ therapy showed that relapse could be drastically reduced for more distressed couples with the added therapy sessions. The results of that second study have not been published, but are available only in Kim Ryan’s dissertation at the moment.

**Couples in Poverty**

The Gottmans extended their work to lower-income unmarried couples with a new baby in a program called “Loving Couples Loving Children (LCLC).” That intervention is a couples group intervention with 21 two-hour sessions that begin with talk-show segments that initiate group self disclosure. The talk shows were led by Julie Gottman. The LCLC intervention was evaluated by the policy group, Mathematica Policy Research in a randomized clinical trial with 3,500 couples, and effectiveness was demonstrated, especially with African-American couples. That study has not been published, but a summary report can be obtained from the Mathematica website. The program was also tested by MDRC with married couples at two sites, one in Shoreline WA, and one in the Bronx, NY. The report on that study can be obtained from MDRC (Manpower Development Research Corp.).

**Couples Recovering from Situational Domestic Violence.**

Fourth, the Gottmans modified LCLC into the Couples Together Against Violence (CTAV) curriculum for situational domestic violence. In that intervention (also with Mathematica Policy Research) the same couples’ group approach was used with 4 added modules, and the use of the Heart Math “Emwave” biofeedback device before every interaction exercise in the group. Couples have to become calm (get in the “green zone”) before beginning each exercise in the group. The Gottman Relationship Research Institute completed a randomized clinical trial study with 18-month follow up with a group of situationally violent couples. The CTAV program has been shown to be effective, and these effects last. A replication study is now being planned with a briefer
intervention in Julia Babcock’s laboratory at the University of Houston. It is important to point out that Babcock’s meta-analysis of male-only groups treating domestic violence showed that no intervention was more effective than one arrest. Hence, the emotionally-focused CTAV study is a first. The effects of the randomized clinical trial of the CTAV intervention with situationally violent couples have been published in a series of papers.

What is unique about this work: (1) It is manualized, with training videos, (2) effects last upon 18-month follow up after treatment termination, and (3) the intervention was evaluated with physiological and observational methods as well as archival police records. We are currently attempting to extend this work in Oregon with a more seriously disturbed court-referred sample, under Julia Babcock’s supervision. References follow.


When (and if) we replicate this work in Oregon, we plan to being training clinicians to use CTAV.

Fifth, in collaboration with Dr. Julia Babcock (a former Gottman student, now professor at the University of Houston), an initial randomized clinical trial study was performed with very difficult characterologically violent married men. She used brief audio training tapes Gottman developed to modify the conflict interaction of these violent men with their wives, obtaining significant proximal changes in interaction and in the satisfaction of wives with the nature of the interaction following treatment. This research is clearly just at the beginning phase.


Trust and Betrayal Theory

More recently the theory building has been concerned with applying game theory in a new way toward an understanding of how couples build trust and loyalty, versus erode trust and create betrayal. New metrics for trust and betrayal have been created and validated by Gottman. That work has led to two books, The Science of Trust, and What Makes Love Last? With Dr. Paul Peluso, a randomized clinical trial study is planned for couples trying to heal after an extra-marital affair.
Summary of Effectiveness Evidence for Intervention/Prevention

It is reasonable to ask what the current status of evidence for the effectiveness of Gottman Method interventions. Here is the current status.

1. Proximal Change Experiments. Gottman suggested that a couples’ therapy program could be built empirically by performing a series of “proximal” change studies. In these studies the goal is smaller than the goal of couples’ therapy. The proximal goal is only to change specific aspects of a couple’s relationship, for example how they begin a conflict discussion, and then examining the effect of that intervention on the second of two conflict discussions. These proximal change studies were examined in a study with Kim Ryan (published) and a dissertation with Amber Tabares (as yet unpublished). These studies showed that it was possible to create change in couples’ interaction with very brief interventions, which were later grouped into the 2-day couples’ workshop called “The Art and Science of Love.”

2. Randomized Clinical Trial of Workshops and Gottman-Method Couples’ Therapy. In a randomized clinical trial that became Kim Ryan’s dissertation, a one-day workshop on building friendship, a one-day workshop on conflict regulation, a two-day workshop combining both, and an added group that added 9 sessions of Gottman-Method couples therapy were compared, with a 1-year follow up. Effectiveness was demonstrated, with the greatest 1-year effectiveness and least relapse for the combined 2-day workshop together with 9 sessions of Gottman-Method Therapy. (Information, materials, and training at: [www.gottman.com](http://www.gottman.com). A paper with Julia Babcock is in press in the *Journal of Family Therapy*, to be published in August 2013.

3. Bringing Baby Home. A randomized clinical trial with the BBH workshop compared to a control group showed powerful effects in reversing the drop in marital satisfaction, reducing post-partum depression, reducing inter-parental hostility, improving the parents’ interaction with baby, and improving the baby’s emotional and language development. The paper is published with Alyson Shapiro. That intervention is being taught to birth educators by The Gottman Institute. That intervention has also had large effects when tested in hospitals in Australia and Iceland. For copies of this and other papers see [www.johngottman.net](http://www.johngottman.net).

4. Loving Couples Loving Children (LCLC). That program was developed by Dr. Julie Schwartz Gottman and John Gottman for lower-income couples who probably did not see school as a positive experience. It is based on a 21-session couples’ group curriculum with talk show segments initiating self disclosure and skill building. It was evaluated by Mathematica in a randomized clinical trial with 3,500 fragile-family unmarried couples, all expecting a baby. That intervention was shown to be highly effective, especially for African-American couples.
5. **Couples Together Against Violence (CTAV).** In a randomized clinical trial completed at Gottman’s Relationship Research Institute (RRI), a couples’ group intervention for situational domestic violence has demonstrated long-term effectiveness on 18-month follow up. (Information, materials, and training currently being prepared for The Gottman Institute).

6. **Emotion Coaching with Children.** The work Gottman and Katz have done in the area of *Meta-emotion* (see the books *Meta-emotion* with Lynn Katz and Carole Hooven, Training DVDs available from the Talaris Research Institute and the Gottman.com website, and the *What Am I Feeling?* book, and *Raising and Emotionally Intelligent Child* with Joan DeClaire), has born fruit in a highly effective intervention for parents with their children. Three randomized clinical trials were conducted by Australian psychologist Sophie Havighurst, showing emotion coaching to be highly effective at preventing and treating externalizing and internalizing disorders in children (see tuningintokids.com.au).

7. **Availability of Reprints of Scientific Articles.** PDF Files of Gottman’s scientific articles are available through the Gottman Institute’s web site  
   [www.johngottman.net](http://www.johngottman.net)