

## Essay

# A System Dynamics Approach to Modelling Individual Peace towards the Creation of a Social Peace Propagation Model

Enya Zhuang (恩雅), Matthew Reso & Jeffery Jonathan יֵשׁוּעַ (Joshua) Davis\*

The Embassy of Peace, Whitianga, New Zealand

## Abstract

The system dynamics model that we present here will be focused on the exploration of individual inner peace. This will include aspects and elements like health, diet and exercise, genetic propensity towards peace, actions of kindness, the environment, quality and quantity of spiritual practice, inspirations, insights and moments of wisdom. We will also touch on the general aspects of how to balance work, stress, spiritual practice and exercise in order to create the desired inner peace. Our aim is to understand the dynamics of the systems involving both individual inner peace and collective social harmony, as well as how peace propagates trans-generationally. It is also important to mention that the term 'inner peace' should be understood as spiritual peace treated broadly in the different texts of ancient and modern wisdom from different cultures. We are convinced and therefore we conjecture, that as more people attain inner peace, human communities of inter-associations of peaceful people will also contribute to the tendency of greater social harmony and, by extension (interaction between communities), humanity will follow the same tendency.

**Keywords:** Global peace, individual peace, social peace, system dynamics, propagation, Embassy of Peace.

## I. Introduction

The dream of global peace is alive today in the hearts and minds of many people. To attain this dream requires that each part of the whole, each person within humanity, finds ways to live in peace and harmony. This is a personal challenge and each person is responsible for fulfilling their own state of peace, whether it be in personal connection with The Creator or in an impersonal interaction with the field of Universal Values.

This essay will explore how this can be done. We will undertake a systems approach to model inner peace, something that will eventually lead to a further study and creation of a social peace propagation model.

---

\*Correspondence: c/o Sarah Frew, The Embassy of Peace, Whitianga, New Zealand. <http://paradiselanding.weebly.com/>  
E-mail: [sarahinparadise888@gmail.com](mailto:sarahinparadise888@gmail.com)

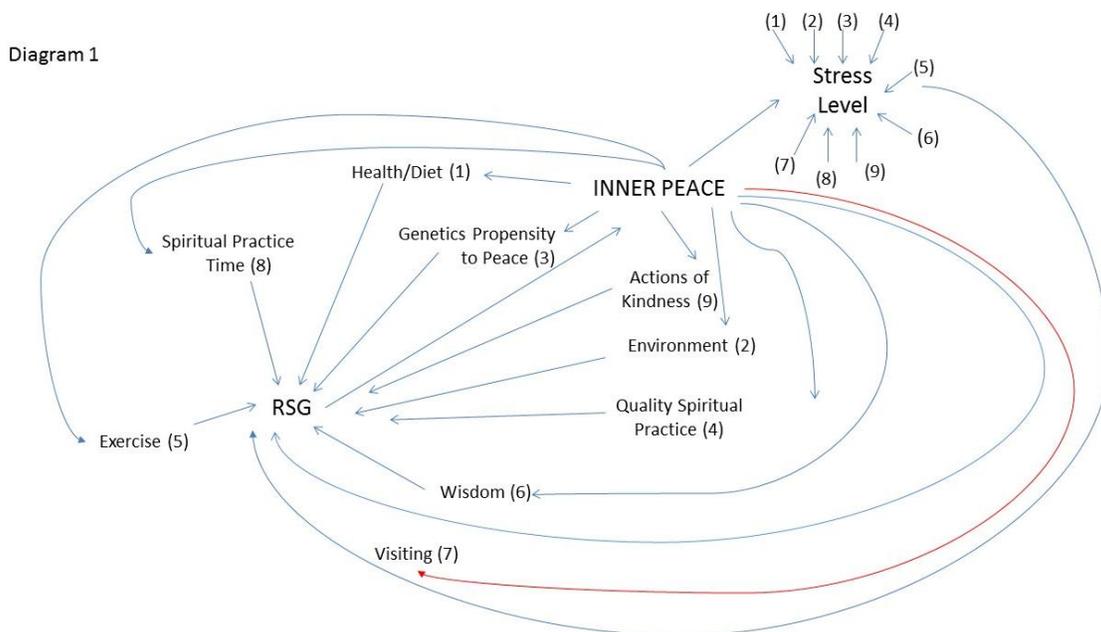
A systems approach is a way of looking at the world [1-3], which is concerned with connectedness and wholeness, emphasizing relationships among the various elements of the system.

Our aim is to understand the dynamics of the systems involving both individual inner peace and collective social harmony, as well as how peace propagates trans-generationally. It is also important to mention that the term ‘inner peace’ should be understood as spiritual peace treated broadly in the different texts of ancient and modern wisdom from different cultures [4-10].

The system dynamics model that we present here will be limited to the exploration of individual inner peace. This will include aspects and elements like health, diet and exercise, genetic propensity towards peace, actions of kindness, the environment, quality and quantity of spiritual practice, inspirations, insights and moments of wisdom. We will also touch on the general aspects of how to balance work, stress, spiritual practice and exercise in order to create the desired inner peace.

We are convinced and therefore we conjecture, that as more people attain inner peace, human communities of inter-associations of peaceful people will also contribute to the tendency of greater social harmony and, by extension (interaction between communities), humanity will follow the same tendency. The study of the process of peace propagation trans-generationally [11] is out of the scope of this work and more likely will be the subject of another paper.

## II. Description of the System and Systems Dynamics Models





Kindness”, eventually, all of these will contribute to the “Rate of Spiritual Growth”, reinforcing the loop concerning “Inner Peace” provided that all these decision elements are in the proper balance, otherwise high “Stress Levels” may arise.

Adding another two elements to Diagram 1, we developed a second systems diagram, Diagram 2. One of the additional elements is the “Rate of Stress” and the other is “Resilience”.

In this systems diagram we show 6 feedback loops as follows:

1. **Feedback loop concerning the element “Actions of Kindness”**: showing that an increase in “Inner Peace” leads to an increase in “Actions of Kindness” which in turn leads to an increase in “RSG”, finally feeding back to “Inner Peace”.

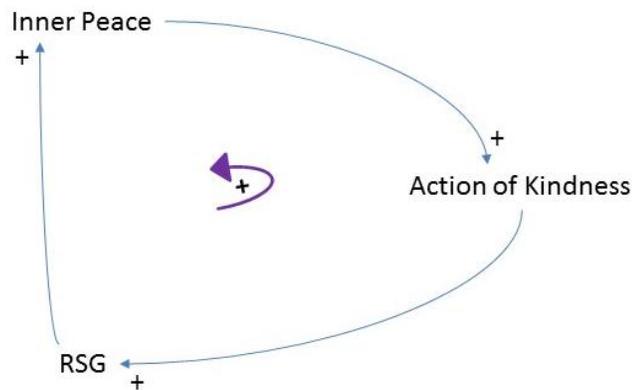


Diagram 2.1

2. **Feedback loop concerning the element “Quality of the Environment”**: showing that an increase in “Inner Peace” leads to an increase in “Actions of Kindness” which eventually influences the quality of the “Environment” that in turn influences the “RSG”, also feeding back to “Inner Peace”.

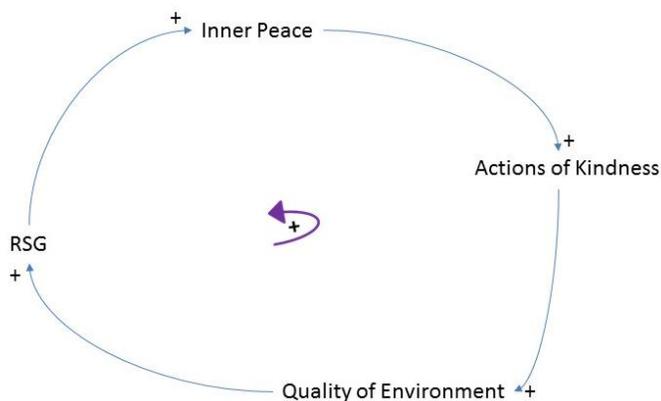


Diagram 2.2

3. **Feedback loop concerning the element “Genetic Propensity to Peace”**: showing that an increase in “Inner Peace” would cause an increase in the “Genetic Propensity to Peace”, also influencing “Resilience” and the “Rate of Stress” which in turn influences the “RSG”, feeding back to “Inner Peace”.

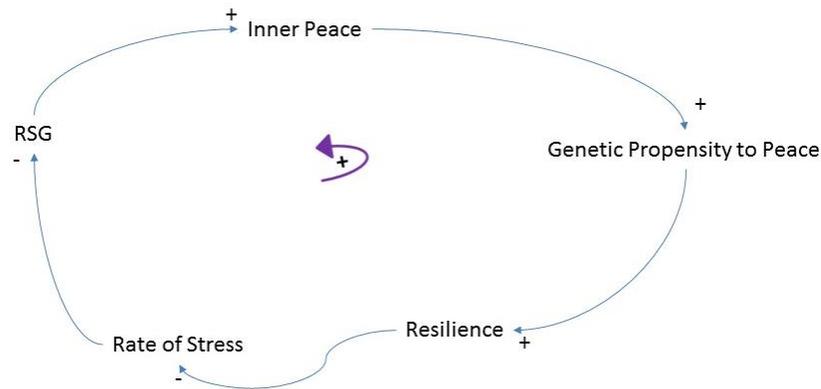


Diagram 2.3

4. **Feedback loop concerning the element “Resilience”**: showing that an increase in “Inner Peace” leads to an increase in “Resilience”, which in turn influences the “Rate of Stress” and through it the “Stress Level”, influencing eventually the “RSG” and feeding back to “Inner Peace”.



Diagram 2.4

5. **Feedback loops concerning the element “Health”**: showing that (a) an increase in “Health” influences the “Rate of Stress” and through it the “Stress Level”, eventually feeding back to “Health” and (b) an increase in “Health” leads to an increase in “Resilience” influencing the “Rate of Stress” and through it the “Stress Level”, eventually feeding back to “Health”.



Diagram 2.5

Note that this feedback loop incorporates the element of “Resilience”.

From the above loops’ conjectured behaviours we can observe that most of the elements 1-9 which were depicted in Diagram 1 would contribute to the growth of “Resilience”, which in turn would impact upon the “Rate of Stress” contributing to the “Stress Level” in the system, eventually influencing the “RSG” and feeding back to “Inner Peace”.

We need to mention that several delays are involved in the system and are indicated by the sign (  $-#-$  ) as shown in Diagram 2, for example, the delay between “Actions of Kindness” and the improvement of the “Quality of the Environment”. Also, a decrease in “Stress Level” will lead to an improvement in “Health” with a delay, since the body needs time to regenerate and recover from stress.

All of these delays may cause oscillations in the system, particularly to the level of “Inner Peace”, which will be discussed in the following section.

Since the real system is by far more complex than any system’s model, we always have to balance complexity with practicality and in order to do that we explore two cases to help us better understand the complexities of the system we are dealing with through our models. The following example will look at and explore one part of Diagram 2.

As shown in Diagram 2.6, when a person performs “Actions of Kindness” (both in quantity and quality) it should eventually influence the “Resilience” of the person in a similar manner that exercising makes one’s body stronger. This implies, as in any other biological system, a “Threshold” of tolerance to extended periods of work which, in our case, is influenced by “Resilience”. It is important to note that “Resilience” will stop growing eventually when it reaches its maximum. “Resilience” should be interpreted in association with arriving at a “Threshold” for continued work, implying a need for recovery. An increase in the “Threshold” determined by “Resilience” also contributes to an increase in “Inner Peace”. Also, if a person has performed an amount of “Actions of Kindness” which is over his or her “Threshold” and when he or she has failed to develop the “Resilience” to recover from over work quickly enough, this

would lead to an increase in “Stress Level” via an increase of the “Rate of Stress”, eventually impacting on the level of “Inner Peace”, all of this being part of a counterbalancing or negative feedback loop. See Diagram 2.7.

Case 1: Reinforcing feedback loop concerning “Actions of Kindness” when taken together with “Resilience”.



Diagram 2.6

In order to determine when the positive feedback loop in Diagram 2.6 leads to an accelerating growth and when it leads to an accelerating decline in “Inner Peace”, together with how to explain the balancing elements between “Inner Peace”, “Actions of Kindness” and “Stress Levels”, we need to take into consideration the “Threshold” for on-going work as well as the maximum “Resilience” of the system.

Case 2: New level of complexity introducing both reinforcing and counterbalancing feedback loops relating “Actions of Kindness” to “Resilience”, “Threshold” and “Stress Level”.

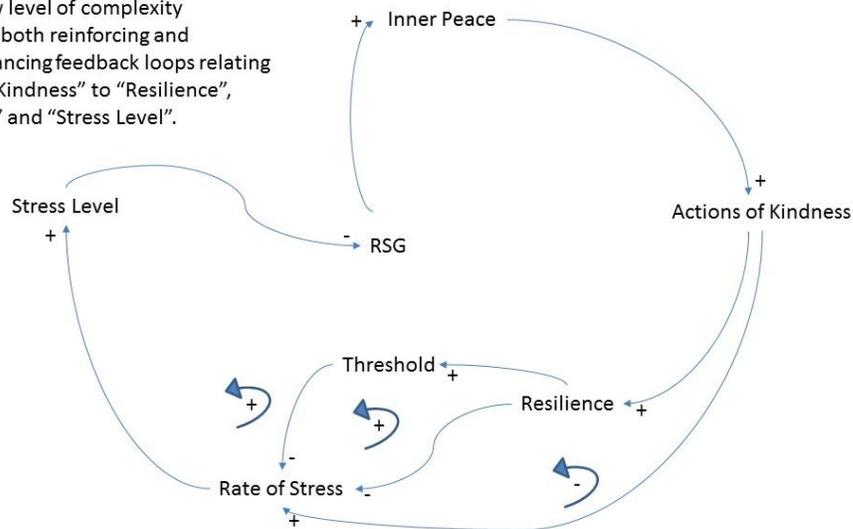


Diagram 2.7



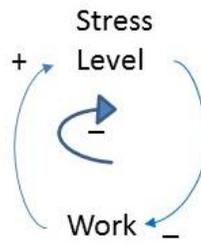


Diagram 3.1

2. **Counterbalancing feedback loop involving “Stress Level”, “Spiritual Practice” and “Work”**: An increase in “Stress Level” causes a decrease in “Work”, a decrease in “Work” causes an increase in “Spiritual Practice” which in turn causes a decrease in “Stress Level”.

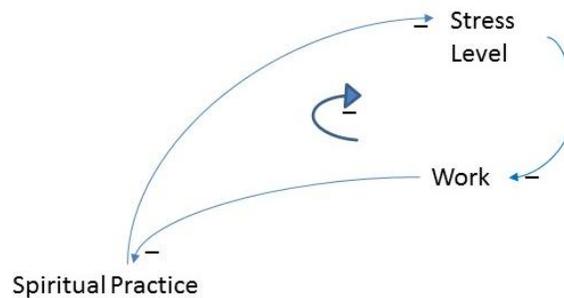


Diagram 3.2

3. **Counterbalancing feedback loop involving “Stress Level”, “Exercise” and “Work”**: An increase in “Stress Level” causes a decrease in “Work”, a decrease in “Work” causes an increase in “Exercise” and that in turn causes a decrease in “Stress Level”.

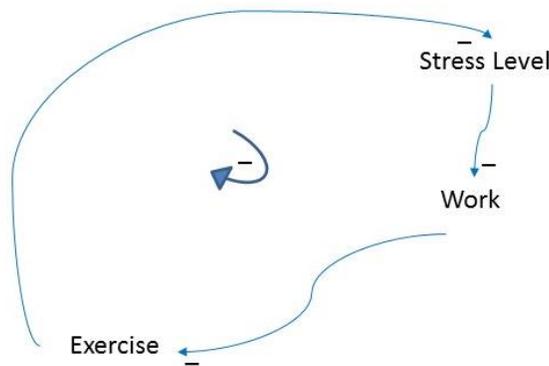


Diagram 3.3

4. **Counterbalancing feedback loop involving “Stress Level”, “Work”, “Spiritual Practice” and “Inner Peace”**: An increase in “Spiritual Practice” causes an increase in “Inner Peace”, which in turn causes a decrease in “Stress Level” causing an increase in “Work”, which also causes a decrease in “Spiritual Practice”.



Diagram 3.4

5. **Counterbalancing feedback loop involving “Stress Level”, “Work”, “Exercise” and “Inner Peace”:** An increase in “Inner Peace” causes a decrease in “Stress Level”, which in turn causes an increase in “Work” that eventually causes a decrease in “Exercise” which finally causes a decrease in “Inner Peace”.

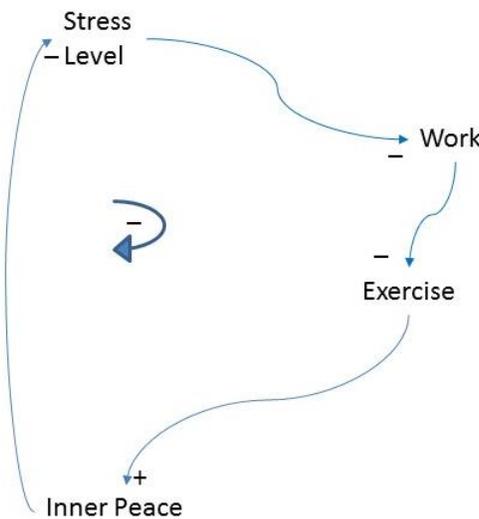


Diagram 3.5

6. **Reinforcing feedback loop involving “Stress Level” and “Inner Peace”:** An increase in “Inner Peace” causes a decrease in “Stress Level” and a decrease in “Stress Level” causes an increase in “Inner Peace”.

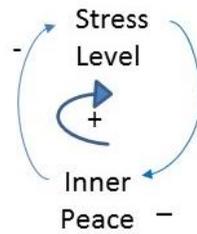


Diagram 3.6

Negative counterbalancing feedback loops tend to keep systems under control by counteracting change-producing goal-seeking behaviour and are in most cases self-regulating. In this case the aim is to find a balance that allows us to maximise “Inner Peace” through “Spiritual Practice” and “Exercise”. Both “Spiritual Practice” and “Exercise” contribute to the increase of “Inner Peace”. Which combination of “Spiritual Practice” and/or “Exercise” is more effective in any given situation is a matter of personal choice and needs.

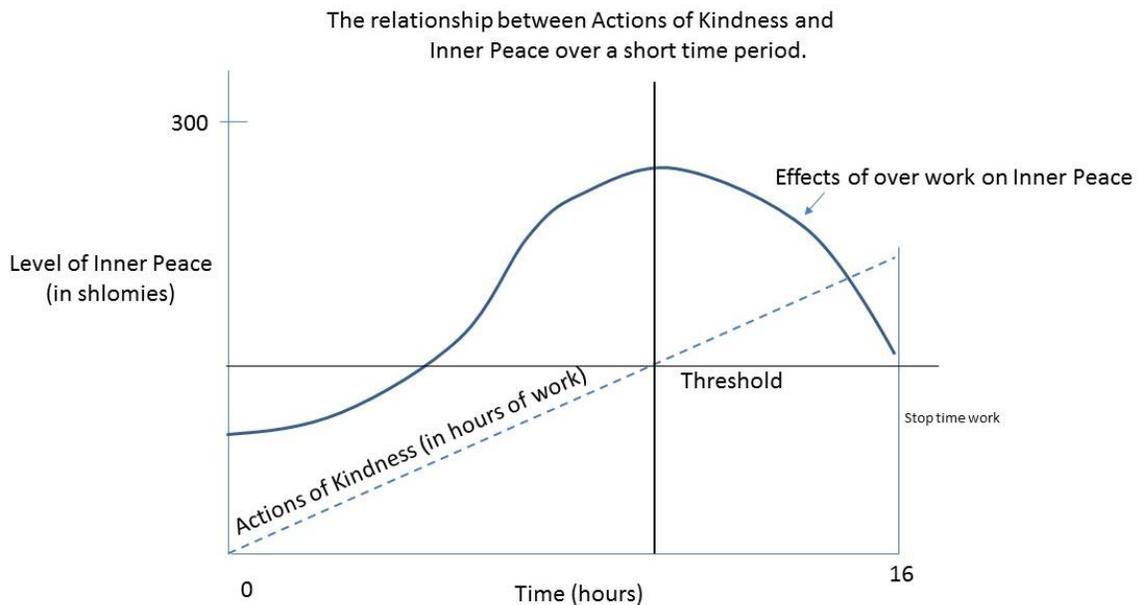
Before we continue to the analysis section of this essay, it is important to note that, though many studies concerning modelling and simulation of social violence, crime, mental health, drug abuse, terrorism and war have been conducted based on very hazy and fuzzy definitions of peace [16-27], some advance has been made in trying to properly define peace as spiritual, neural and psychological states [28-34] instead of the traditional absence of war concept, “...has moved beyond a narrow understanding of peace as the mere absence of war and direct violence” [35, p. 267] and “Boulding 1978 states that positive peace is a “condition of good management ..., harmony associated with mature relationships, gentleness and love.”” [35, p. 267]. Also more in depth analysis has been done to define spiritual values and peace in a way that now allows these “soft variables” to be modelled [36-38] and formal studies to scientifically uncover causal relationships between such variables like altruism and love reflected in actions of kindness and its hormonal benefits [39-40].

### III. Analysis of the System and Systems Dynamics Models

The previous section of this essay described a set of possible causal relationships and the structure of feedback loops interacting in the system. In this section we will further analyse the dynamics of the models mentioned previously for a better understanding of the effects of our actions on internal states of being. We will start by looking at the relationship between “Inner Peace”, “Actions of Kindness”, “Quality of the Environment” and the “Rate of Spiritual Growth” (RSG) shown previously in Diagram 2.2.

An increase in “Inner Peace” enables a greater capacity and awareness to perform “Actions of Kindness”. This will cause an improvement on the “Quality of the Environment” with some

delay, further causing an increase in the “RSG” and feeding back to increase “Inner Peace”. One would expect to see an exponential growth in “Inner Peace” here due to the nature of a positive (reinforcing) feedback loop. In reality however, since each person has a limit to the amount of on-going “Work” that they can perform before becoming fatigued and reaching their “Threshold”, the level of “Inner Peace” will be compromised if they continue to work after the “Threshold” has been reached. There will also be a delay between the performance of “Actions of Kindness” and an improvement in the “Quality of the Environment” depending on the nature of the “Actions of Kindness” and on their recipients. This will most likely cause fluctuations in the level of “Inner Peace” of the performer of these actions over longer periods of time, as there is no immediate improvement on the “Quality of the Environment”. This will cause the level of “Inner Peace” to decline before the fruits of their “Actions of Kindness” are yielded and the level of “Inner Peace” begins to rise again. Graph 1 represents these dynamics showing a hypothetical scenario of how the level of “Inner Peace” changes over a 16-hour period in a day. At first the level of “Inner Peace” begins to grow exponentially as the positive feedback loop causes “Inner Peace” to grow like a snowball. However, after some time “Inner Peace” continues to grow at a decreasing velocity as fatigue begins to have an effect. “Inner Peace” then reaches a maximum before it begins to decline at an accelerating rate due to the effects of fatigue.



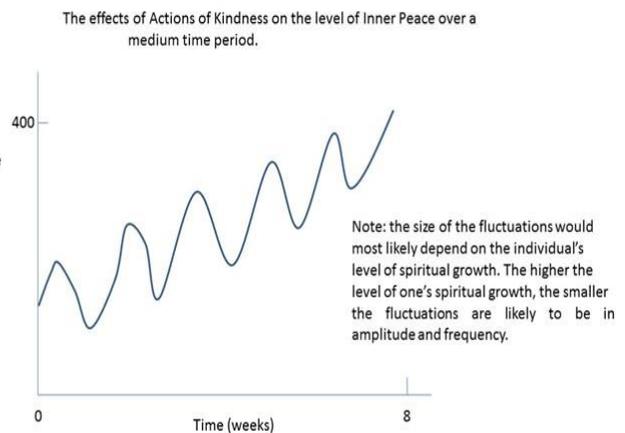
Graph 1

Graph 2 shows the effect of “Actions of Kindness” on “Inner Peace” carried out over the period of 8 weeks. Here we can observe the effects of the delay which occurs between the “Actions of Kindness” performed and the effect this has on the “Quality of the Environment”, together with the delays caused by the recovery time when the “Threshold” is met. The conjectured effect of the delays shows that after some time of performing “Actions of Kindness” there is no apparent

improvement in the “Quality of the Environment”. This may cause the level of “Inner Peace” to eventually drop for a period of time until the recovery periods are met and the effects of “Actions of Kindness” begin to show up in higher levels of “Inner Peace”. This eventually will show an improvement on the “Quality of the Environment” causing “Inner Peace” to also rise. This process is likely to continue over the period of weeks with an overall growth in “Inner Peace” due to, for example, the dominant nature of the positive feedback loop and these are precisely the kind of scenarios that would need to be tested with a simulation model to further validate any of these kinds of hypotheses.

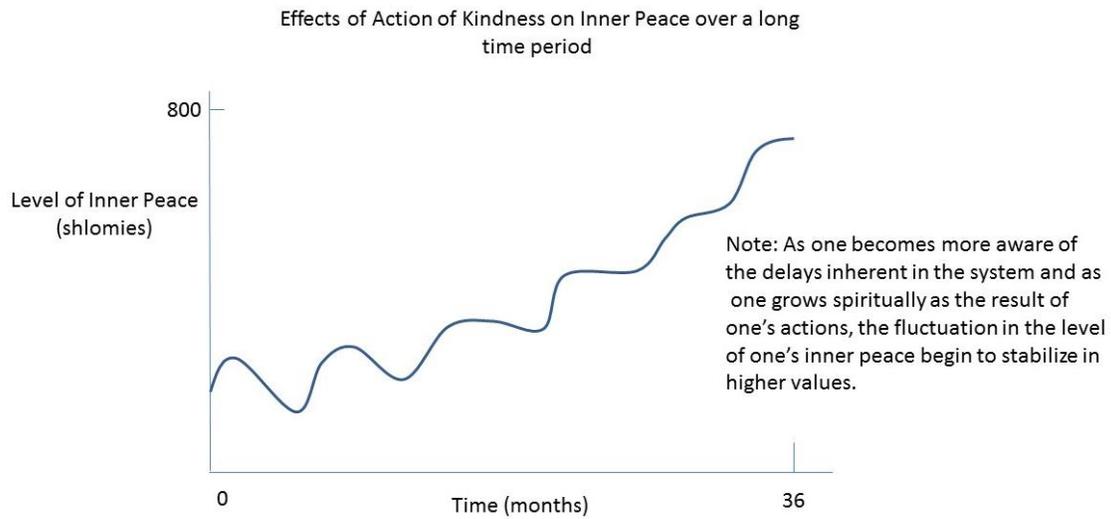


Diagram 2.8



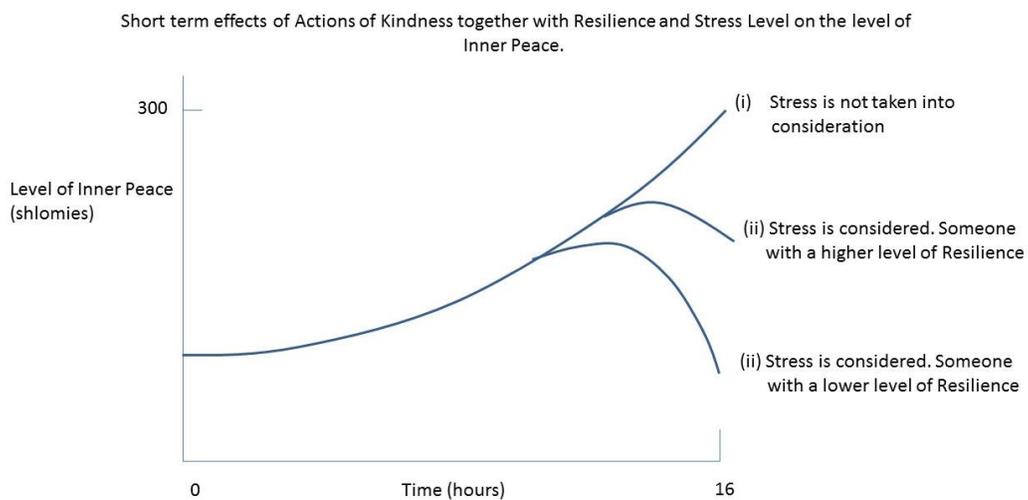
Graph 2

Graph 3 shows the conjectured effects of “Actions of Kindness” on “Inner Peace” over a longer time frame of 36 months. Here we can see once again the delayed effects on the “Quality of the Environment” after performing “Actions of Kindness”. This as in the previous scenario would cause oscillations in the system, however as time progresses and one grows spiritually, the amplitude and perhaps even the frequency of these oscillations would possibly begin to diminish. Once again the overall effect depicted in Graph 3 is a net growth in the level of “Inner Peace” over a period of time due to the dominance of positive feedback loops.



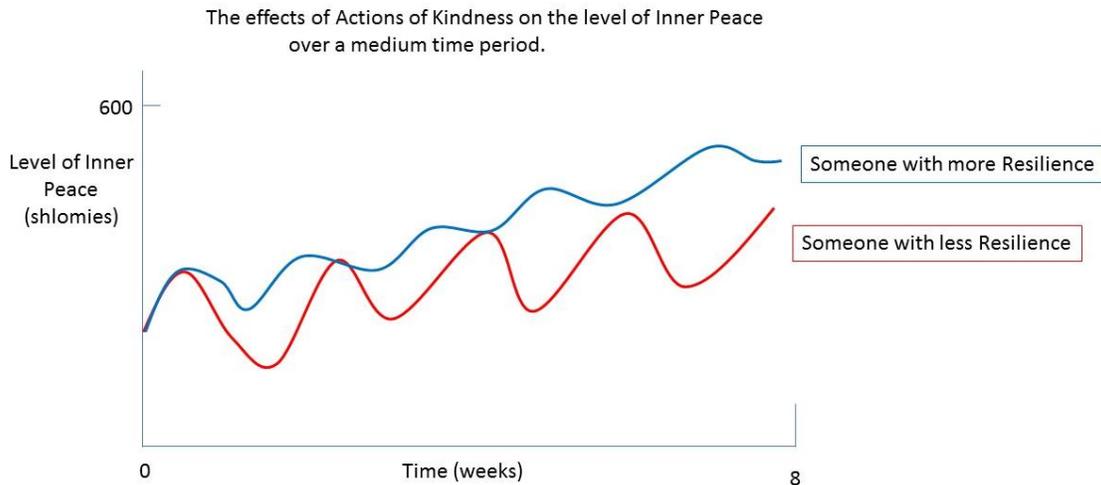
Graph 3

Now let us consider the effects of “Stress Level” and “Resilience” on the system represented in Diagram 2.7. If “Actions of Kindness” are continued, at some stage fatigue will set in, causing stress to the body and eventually a decline to one’s level of “Inner Peace”. Here the concept of “Resilience” comes into play. The more “Resilience” that one has developed the higher the “Threshold” associated with resistance to overwork, which will contribute in the direction to lessen the “Rate of Stress”, something that will eventually prevent the decline of “Inner Peace”. It is conjectured that the more “Resilience” one has developed the faster “Inner Peace” will be recovered. Taking into consideration Diagram 2.7, we can derive the situation where “Resilience” is maintained at high values while “Stress Level” is kept in check, so to speak, and one or more of the positive feedback loops involved remain dominant.



Graph 4

We can see in Graph 4 the effects of “Resilience” in the system. The greater one’s level of “Resilience”, the longer one will be able to perform “Actions of Kindness” or “Work” before the “Threshold” is met and the “Stress Level” begins to cause a reduction in one’s level of “Inner Peace”. In addition to this, as we have explained before, the greater one’s level of “Resilience”, the lower the rate of decline of “Inner Peace” will be once “Stress Level” has begun to show its effect.

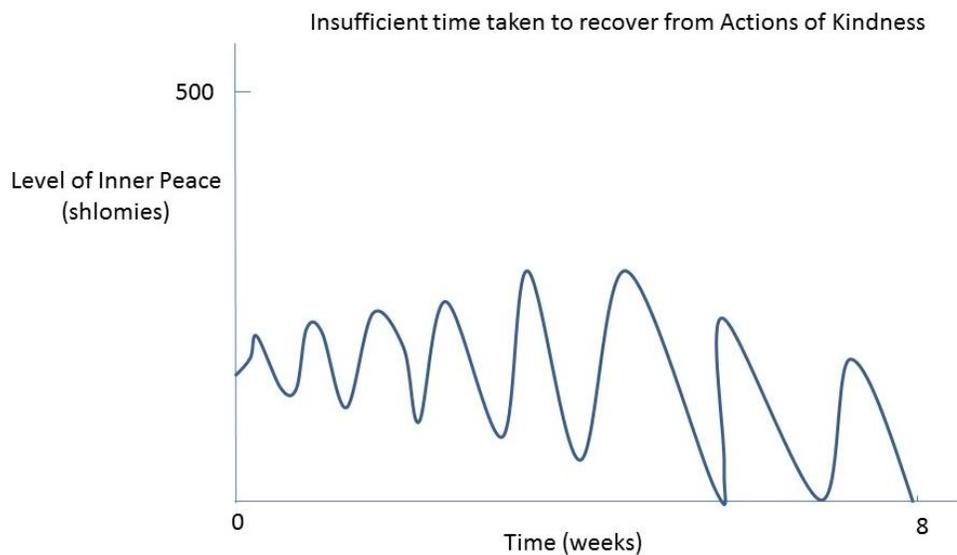


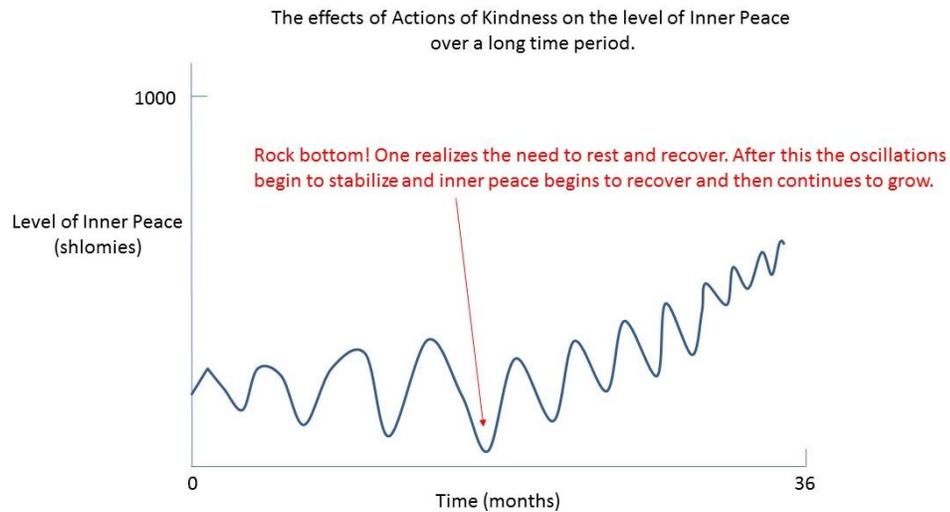
Graph 5

In Graph 5 we can see the effect of “Resilience” on the level of “Inner Peace” over a medium time period. In this example we compare the dynamics of two different people concerning “Inner Peace” and different “Resilience” levels. We observe that someone who has developed less “Resilience” shows greater fluctuations in the level of “Inner Peace” than does someone with more “Resilience”. This is due to the fact that the level of “Inner Peace” will be more greatly affected by the same amount of “Stress Level” and also because the delay in recovery will be greater. If “Actions of Kindness” continue to be performed without taking the time to recover from overwork, the most likely outcome will be increasingly large oscillations in the graph and an increasingly sharp decline in the level of “Inner Peace” due to “Threshold” violations. This topic will be covered further in the next section of the analysis. Furthermore, it is expected that the greater one’s “Resilience”, the more the level of “Inner Peace” will eventually rise over time, by the influence of “Actions of Kindness”. This is due to the fact that the level of “Inner Peace” will be affected by smaller fluctuations caused by higher “Threshold”, together with smaller periods of recovery, which would be caused by high levels of “Resilience”. All of this contributes to reinforce the positive feedback loop concerning “Inner Peace”, “Actions of Kindness” and “Resilience”.



Now we will consider what happens in Diagram 2.7, where one continues to perform “Actions of Kindness” without taking a break to rest and recover. That is if one continues performing “Actions of Kindness” above “Threshold” for an extended period of time. In this case, “Resilience” will begin to decline eventually causing the “Stress Level” to go up, while “Inner Peace” and “Resilience” continue to drop towards their acceptable minimum. In Graph 8 we see the result of performing “Actions of Kindness” for an extended period of time beyond one’s capacity. The oscillations in the graph become increasingly wild and eventually the net growth in “Inner Peace” plateaus and then begins to decline. Over a longer time frame this may lead to oscillations with a larger period as one goes through a process of overwork, followed by a recovery time which has some benefit yet insufficient, followed by another period of overwork and so on. This will cause the net level of “Inner Peace” to decline until one realizes the imperative to rest and recover. After which, as time goes on, one develops greater “Resilience” and the awareness and mastery needed to know when to stop and recover, which will result in the oscillations beginning to stabilize and “Inner Peace” starting to recover and continue to grow (see Graph 9).



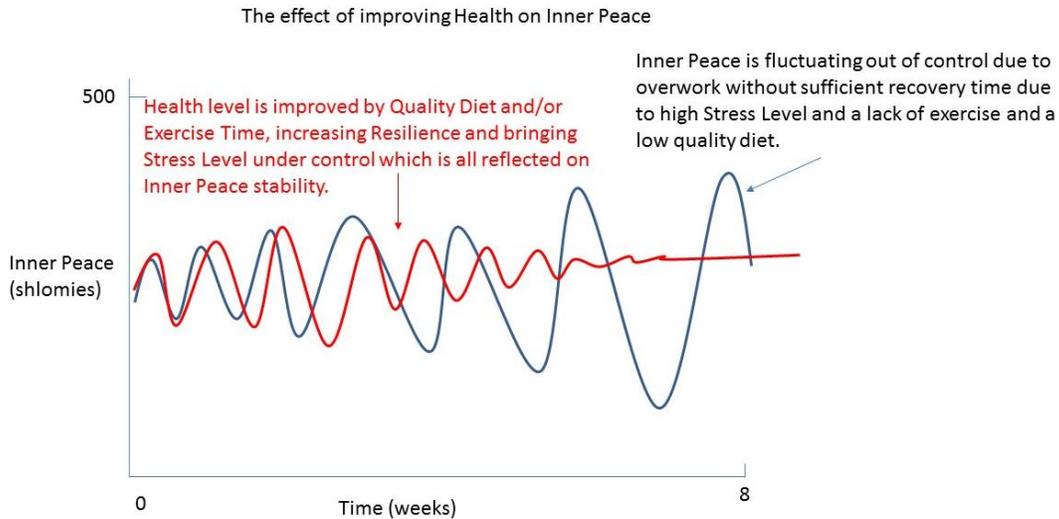


In Diagram 2.5 we consider the relationship between “Resilience”, “Stress Level” and “Health”. As we can see, “Health” is a factor that will affect the “Stress Level” as well as “Resilience” and therefore has a strong influence on “Inner Peace”. As “Health” increases, “Resilience” increases, leading to a decrease in both the “Rate of Stress” and “Stress Level”. As “Stress Level” decreases, “Health” will eventually further increase with some delay. This can also work in the opposite direction with a decrease in “Health” leading to a decrease in “Resilience”, an increase in “Rate of Stress” and an increase in “Stress Level”. The importance of this is that “Health” is a variable that can be used or abused in a way that will support spiritual growth and “Inner Peace” or contribute to their decline.

In the graphs in the previous section, particularly in Graph 4, we can see the effect on “Inner Peace” caused by a reduction in “Stress Level” due to an increase in “Resilience”. It is important to note that increasing “Resilience” serves the purpose to raise the “Threshold” which will allow one to perform “Actions of Kindness” for longer periods of time without suffering from overwork. It will also smooth out oscillations in the system when the influence of overwork becomes relevant as shown in Graph 5. The reverse is also true for the case where decreasing “Health” causes an increase in “Stress Level” which in turn causes a decrease in “Resilience”. Two parameters that can be used to increase “Health” and shift the system in a positive direction are a “Quality Diet” and a suitable program of physical “Exercise Time”. These parameters are depicted in causal Diagram 2 in Section II of this paper.

Let us briefly explore the effect of implementing a better diet which is represented by a higher value of the parameter “Quality Diet” as well as a regime to raise the value of the parameter of “Exercise Time” when one realizes that their “Stress Level” is getting out of control. Higher values of “Quality Diet” and “Exercise Time” will both raise the level of “Health” with some delay. In Graph 10 we see that after some delay the level of “Inner Peace” which is beginning to

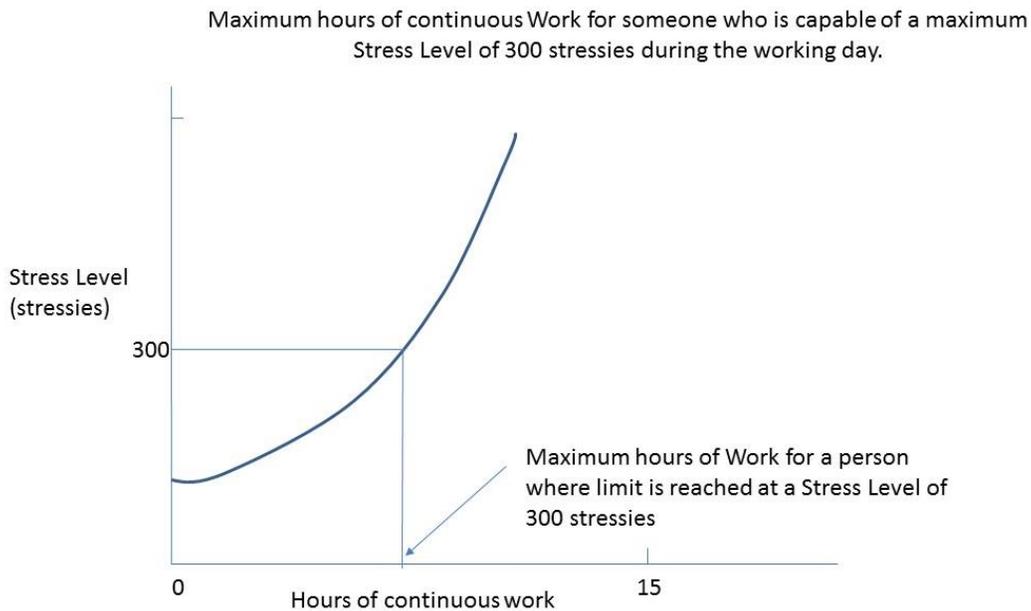
oscillate out of control due to an excessive “Stress Level” is gradually brought under control and stabilized. An increase in “Health” has both a direct bearing on “Stress Level” as well as a bearing on “Resilience” which will further impact “Stress Level”.



Graph 10

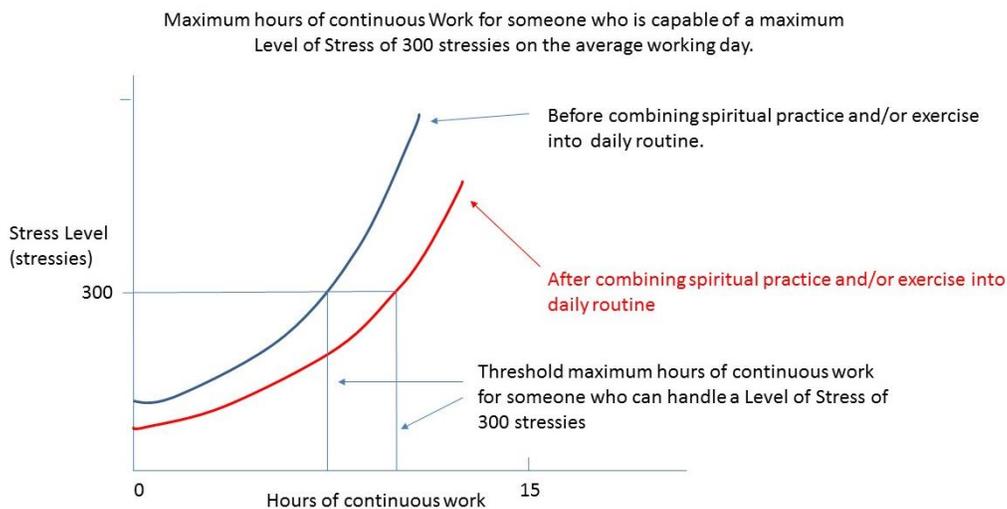
Now let us look at Diagram 3 and consider some actions that one might be able to take to address the situation of overwork causing “Stress Level” and a loss of “Inner Peace”, a situation that is prevalent in modern society in which the majority of people find themselves locked in a mentality of survival, believing that they need to compete for resources, a very stressful situation at the best of times.

Let us consider the situation in which the average amount of “Work” which one is able to do on a given working day depends upon the “Stress Level” that one is able to endure. These parameters will be held in check by the counterbalancing (negative) feedback loop involving “Stress Level” and “Work”. Here we see that the more “Work” done the greater the increase in “Stress Level” and the greater the increase in “Stress Level” the less the amount of “Work” that is able to be done. There will be a limit in the hours of “Work” that one will be able to do for the given amount of “Stress Level” that he or she is physically and psychologically willing or able to endure. This is represented below in Graph 11:

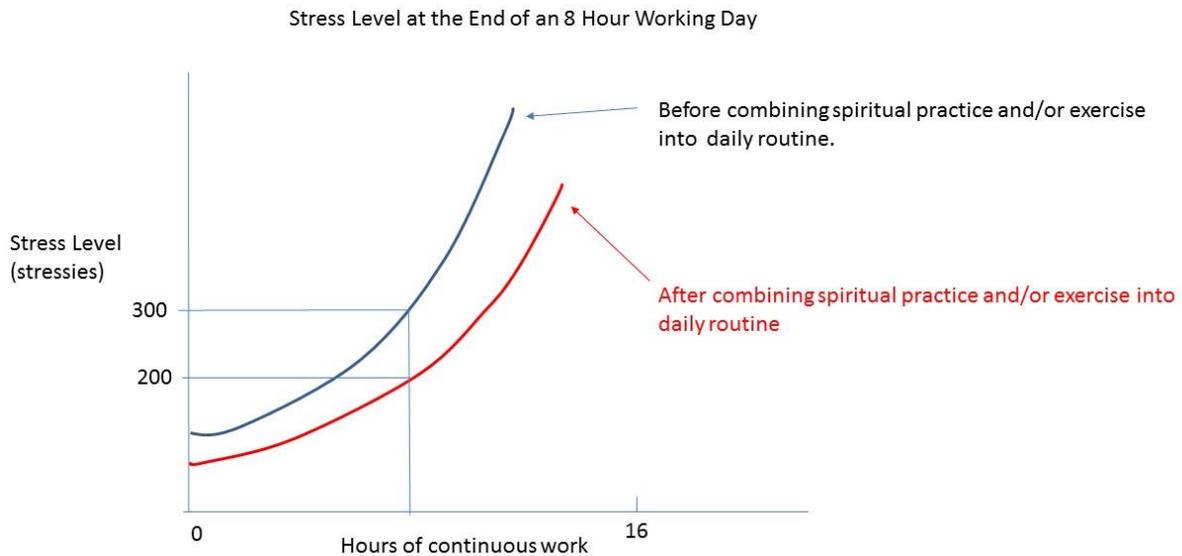


Graph 11

Diagram 3 indicates that when one incorporates some form of “Spiritual Practice” or “Exercise” or a combination of the two into their working day, this will boost the level of “Inner Peace” and will therefore cause the “Stress Level” to drop. It is conjectured that this will have the overall effect that one will be able to work for a longer period of time on average per day. Furthermore, one will accumulate less “Stress Level” on the average working day than one was before combining “Spiritual Practice” and/or “Exercise” into one’s life, provided that he or she is working the same amount of hours. When graphing the relationship between “Stress Level” and hours of “Work”, this will have the effect of reducing the gradient of the curve. See Graphs 12 and 13 below:

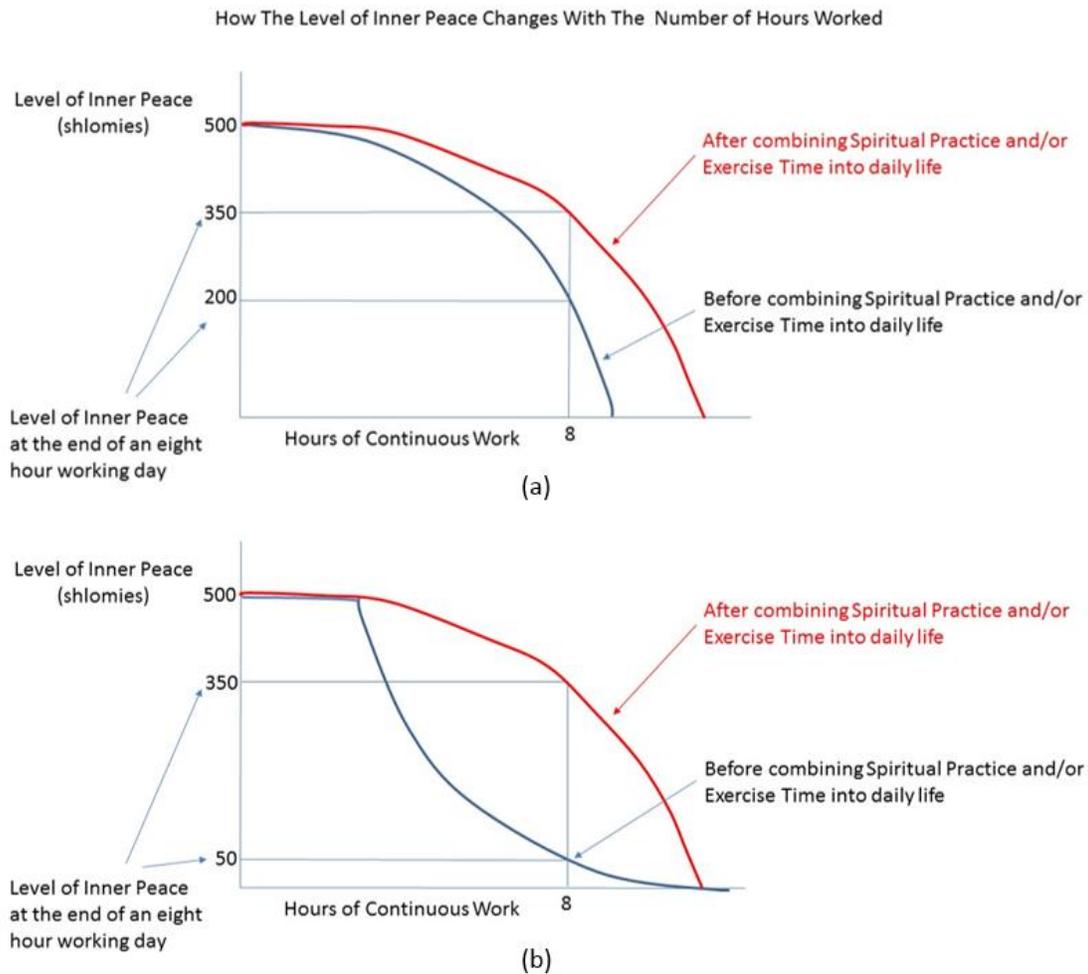


Graph 12



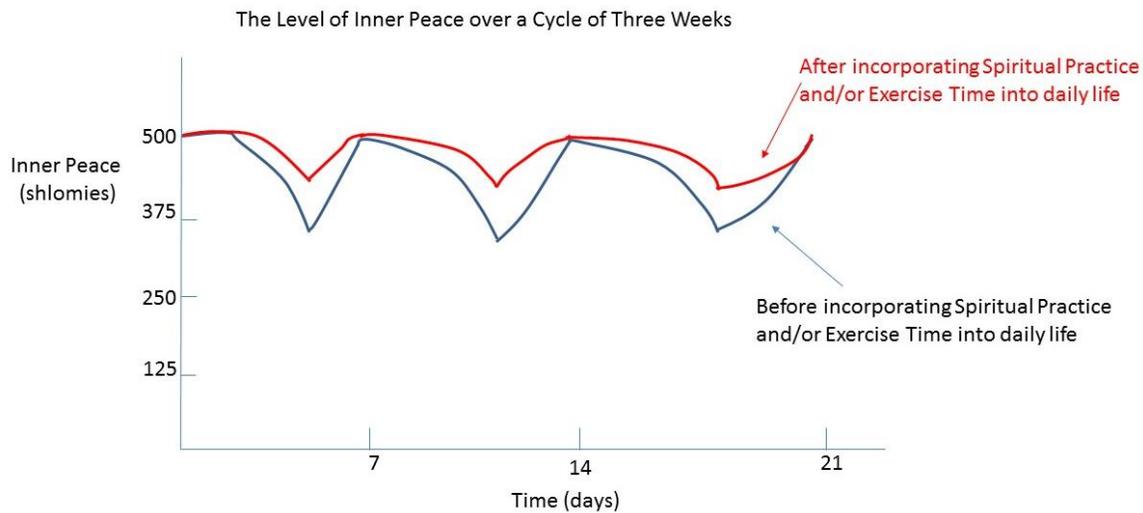
Graph 13

Graph 14 which is also related to Diagram 3, indicates the relationship between “Inner Peace” and the number of hours spent at “Work” in a hypothetical situation in which the positive feedback loop relating “Stress Level” with “Inner Peace” predominates. It is conjectured that “Inner Peace” will decline at an accelerating rate as shown in Graph 14(a) caused by a rise in “Stress Level”, caused in turn by a rise in hours of “Work”. Furthermore, the graph indicates the effect on “Inner Peace” of incorporating a regime of “Spiritual Practice” and/or “Exercise Time” into daily life. It is conjectured that the effect this will have will be to slow down the drop in “Inner Peace” and therefore *ceteris paribus*, “Inner Peace” will show higher levels for someone who has incorporated spiritual practice and/or exercise into their daily routine. It is also important to note that the drop in “Inner Peace” could also happen exponentially as shown in Graph 14(b) due to the influence of other variables and elements of the system like the level of “Health” and “Resilience”, to name a couple. Since the level of complexity of the system shows the interaction between many aspects of life that may affect “Inner Peace”, the complexity and diversity of the system dynamics is expected to increase with changes in the values of the different parameters of the model.



Graph 14

Just as there will be a cumulative drop in “Inner Peace” during the working day, it is conjectured that there will also be a cumulative drop in “Inner Peace” over the working week, thus necessitating a break at the end of each week to rest and recover before resuming work again the following week. The situation of a working week, followed by a weekend of rest in repeated cycles has yielded Graph 15 below:



Graph 15

Once again we see a drop in the gradient of the curve and a lessening of the loss of “Inner Peace” over the working week when one incorporates “Spiritual Practice” and/or “Exercise Time” into the daily routine. One benefit associated with this may be the ability to work a six-day week instead of a five-day week and certainly to experience a greater “Inner Peace” for any given number of hours worked.

Taking into consideration the positive effects of “Spiritual Practice” on “Inner Peace”, we can safely conjecture that if one of the days of the weekend is devoted to spiritual replenishment, this will have an even greater benefit on one’s overall “Inner Peace” than if it were just an ordinary day of rest. This gives some insight into the ancient practice of taking a day of rest to re-establish a connection with The Divine, which is a feature of many cultures, most notably the Sabbath Day of the ancient Israelites and their genetic and cultural offspring who have maintained their cultural identity and others who have followed in their footsteps.

#### IV. Conclusions and Future Perspectives

In this section we leave the reader with more questions than answers and we offer the far reaching possibility to endeavour ourselves with the understanding of inner peace as a spiritual reality and a real experience associated with, and equally real, biological processes to stabilize the nervous system and brain structures whereby the attention and perception of such a state of being in harmony is mastered.

One of the benefits of the models we have proposed resides in the synergy derived from sharing different mental models in order for a team to work through the process together to achieve such

a shared model, by which such a team could explore the interactions between inner peace, stress level, health, spiritual practices, exercise, work, actions of kindness and resilience. This is geared to deepen one's own understanding of the balancing processes operating between all of these elements, in order to find ways to achieve individual peace, health and wellbeing, as well as social harmony expressed in creative constructive actions and work.

Some of the challenges we face with the different conjectured relationships are related to the need to scientifically validate, somehow, the causality of these relationships, something which requires an exploration and review of different scientific material in the areas of sociology, anthropology, genetics, neuroscience, biology, physics, psychology, philosophy and mathematics, together with the revision of historical and mythical material concerning ancient wisdom.

In addition, new research is required to explore these causal relationships and any new ones where we find holes in the literature which, more likely will be so, since, for the last two centuries, science has been confined to an extreme over reductionism concerned only with material and energetic interactions, leaving the spiritual realms in a state of neglect, with its consequences and effects on modern science views.

It is strongly recommended and we intend to do our part, so that in future studies we will include the development of simulation models in order to test our mental models, with complementary scientific research, to validate the causal relationships present in the model and be able to use such simulation models to test various scenarios concerning different individual needs, in order to prescribe policies and strategies to achieve inner peace, health, wellbeing and creative work leading to social harmony.

It is also the intention of our team to create system dynamics and simulation models to describe the process of peace propagation socially and trans-generationally in a similar manner that virus models show how the organism can propagate or become extinct.

**Acknowledgments:** The team at The Embassy of Peace would like to acknowledge The Creator for being a continuous source of inspiration, inner peace and harmony to our small societal community. We would also like to acknowledge the dedication and support of Sarah, Florian, Keryn, Maria, Colin, Carey and Kali for the completion of this work.

## Glossary

**Actions of Kindness:** the selfless concern for the wellbeing of others reflected in action.

**Delay:** the passing of time between cause and effect. The delays as shown in the diagrams are represented by two (2) parallel lines across the causal relationship arrows.

**Environment:** the surroundings or conditions in which a person operates.

**Genetic Propensity to Peace:** a genetic map inherited from one's ancestors influencing one's tendency towards being peaceful.

**Inspiration, Insights and Moments of Wisdom (“Visiting”):** events that cause a sudden change or the initiation of a change at a particular point in time.

**Negative Feedback Loop:** a causal loop whose dynamics may lead to or produce oscillations, reaching an equilibrium or goal.

**Positive Feedback Loop:** a causal loop whose dynamics are usually characterised by exponential growth or decline.

**Rate of Spiritual Growth (RSG):** the net velocity at which Inner Peace grows or declines. Inner Peace is quantified in hypothetical units of Inner Peace (shlomies) and the RSG in shlomies per time.

**Rate of Stress:** the net velocity at which stress grows or declines, measured in units of stress per unit of time (stressies/time).

**Resilience:** the act of springing back, rebounding or resiling, the power or ability to recover quickly from a setback, depression, illness, overwork or other adversity [41].

**Spiritual Practice:** any activity that leads to or fosters Inner Peace like: meditation, prayer, rhythmic breathing or chanting to name a few.

## References

- [1] D.H. Meadows (edited by D. Wright); Thinking in Systems - A Primer. (USA: Chelsea Green Publishing Co., 2008).
- [2] N. Roberts et al; Introduction to Computer Simulation - A Systems Dynamics Modelling Approach. (USA: Addison-Wesley Publishing Co., 1983).
- [3] L. von Bertalanffy; General Systems Theory - Foundations, Development, Applications (revised Edition). (NY: George Braziller Inc., 1968).
- [4] Selections From The Upanishads and The Tao Te King. (USA: The Cunningham Press, 1951)
- [5] Wise Men Talking Series; Lao Zi Says. (China: Sinolingua, 2006).
- [6] D. Stern (translator); The Complete Jewish Bible. (USA: Jewish Testament Publications, Inc., 1998).
- [7] The Teachings of Buddha. (Taiwan R.O.C: The Buddhist Promoting International Foundation YMBA Report).
- [8] A.C. Bhaktivedanta Swami Prabhupāda (His Divine Grace); The Bhagavad-Gītā as it is. (Taiwan: The Bhaktivedanta Book Trust, 1972).
- [9] Urantia; The Urantia Book. (USA: Urantia Foundation, second printing 2001).
- [10] J.J. Hurtak; The Book of Knowledge - The Keys of Enoch. (California, USA: The Academy for Future Science, 1977).
- [11] J.J.J. Davis; “The Brain of Melchizedek” - Thesis, Otago University, Dunedin, New Zealand (2009). (In particular, Appendix C).

- [12] P. Senge et al; The Fifth Discipline Fieldbook - Strategies and Tools for Building a Learning Organization. (USA: Doubleday Dell Publishing Group, 1994).
- [13] P. Senge et al; The Necessary Revolution - How Individuals and Organizations Are Working Together to create a Sustainable World. (UK: Nicholas Brealey Publishing, 2010).
- [14] P. Senge; The Fifth Discipline - The Art and Practice of the Learning Organization. (USA: Doubleday Dell Publishing Group, 1990).
- [15] P. Senge et al; Presence - Exploring Profound Change in People, Organizations and Society. (Finland: Nicholas Brealey Publishing, 2004).
- [16] L. Brown et al; State of the World - A Worldwatch Institute Report on Progress Toward a Sustainable Society 1994. (USA: W.W. Norton & Co. 1994).
- [17] C. Rossi; "The role of dynamic modelling in drug abuse epidemiology." *Offprint from Bulletin on Narcotics, Vol. LIV, Nos 1 and 2*, (2002).
- [18] J.M. Epstein; "Modeling Civil Violence: An Agent-Based Computational Approach." Proceedings of the National Academy of Sciences of the United States of America, Vol. 99, No. 10, Supplement 3: Arthur M. Sacker Colloquium of the National Academy of Sciences. URL: <http://www.jstor.org/stable/3057848> (2011).
- [19] A. Grynkewich and C. Reifel; "Modeling Jihad: A System Dynamics Model of the Salafist Group for Preaching and Combat Financial Subsystem." *Strategic Insights, Vol. V, Issue 8*, (November 2006).
- [20] T. Krygier Glekel and M. Levy Seir; "Planteamiento De Un Modelo Acerca De La Evolucion De La Delincuencia, Referente A Los Delitos Contra La Propiedad, En Venezuela" - Thesis. Universidad Metropolitana, 1992.
- [21] R. L. Ackoff; Redesigning The Future - A Systems Approach to Social Problems. (USA: John Wiley & Sons, Inc., 1974).
- [22] N. Choucri; "Using System Dynamics to Model and Better Understand State Stability". Working Paper CISL# 2007-03. Composite Information Systems Laboratory (CISL), 2007. Accessed on: <http://ic3.mit.edu/ResearchSamples/2007-03.pdf>
- [23] M.J. Radzicki and W. Scott Trees; "An Institutional Dynamics Approach to the Study of Peace and World Order". Department of Social Science and Policy Studies, Worcester Polytechnic Institute, Massachusetts. Accessed 8 December, 2015: <http://www.systemdynamics.org/conferences/1992/proceed/pdfs/radzi543.pdf>
- [24] T. Bosse and C. Gerritsen; "Social Simulation and Analysis of the Dynamics of Criminal Hot Spots". In: *Journal of Artificial Societies and Social Simulation 12 (2) 5* <http://jasss.soc.surrey.ac.uk/13/2/5.html> DOI: 10.18564/jasss.1498, (2010).
- [25] L. López; "A System Dynamics Model of Crime." Incae, Graduate School of Business. Costa Rica. Accessed 8 December, 2015: [http://www.systemdynamics.org/conferences/2001/papers/Lopez\\_1.pdf](http://www.systemdynamics.org/conferences/2001/papers/Lopez_1.pdf)
- [26] D. McMillan, C. Simon and J. Morenoff; "Modeling the Underlying Dynamics of the Spread of Crime." *PLOS ONE*, [www.plosone.org](http://www.plosone.org), April 2014, Vol. 9, Issue 4, e88923.

- [27] T. HockWoo; ‘Agent-based model and system dynamics for peace-keeping operations.’ (USA: Dudley Knox Library/Naval Postgraduate School, 2014).
- [28] K.H. Pribram; The Form Within - My Point of View. (USA: Prospecta Press, 2013).
- [29] J.J.J. Davis, G. Gillett, and R. Kozma; “Revisiting Brentano on Consciousness: Striking Correlations with Electrocorticogram Findings about the Action-Perception Cycle and the Emergence of Knowledge and Meaning.” In: *Mind and Matter - An International Interdisciplinary Journal of Mind-Matter Research - From Intentionality to Nonlocality*. Vol. 13, Issue 1, 2015.
- [30] F. Huang; “Evaluation of the “Treatability” Test for Patients with “Psychopathic Disorder” in the Mental Health Act 1983 for England and Wales”. (Dissertation in part fulfilment of Masters of Bioethics and Health Law, University of Otago, New Zealand, June 2008).
- [31] F. Huang and G. Gillett; “Bao-yu: A Mental Disorder or a Cultural Icon?” *Journal of Bioethical Inquiry - An interdisciplinary forum for ethical and legal debate*. DOI 10.1007/s11673-014-9511-x. (Springer Science+Business Media Dordrecht, 2014)
- [32] D. Raković and D. Koruga (Editors); “Consciousness: Scientific Challenge of the 21<sup>st</sup> Century”. Belgrade: European Centre for Peace and Development (ECPD) of the United Nations University for Peace, (1996).
- [33] A.D. Holmes; “Embracing the Paradox: Spiritual Issues in General Practice”. Thesis, Doctor of Philosophy, University of Otago, Dunedin, New Zealand, (2010).
- [34] K. Steslow; “Beneath the Form of Eternity - Wittgenstein, the Spirit, and Psychosis”. Thesis, Doctor of Philosophy, University of Otago, Dunedin, New Zealand, (2012).
- [35] P. Coleman and M. Deutsch (Editors); Psychological Components of Sustainable Peace (Peace Psychology Book Series - 12<sup>th</sup> Edition. p.267, (Springer, 2012).
- [36] C.T. Tart; “Enlightenment and Spiritual Growth: Reflections from the Bottom Up.” Keynote address in *Subtle Energies & Medicine, Volume 14, Number 1*. Accessed 8 December, 2015: <http://journals.sfu.ca/seemj/index.php/seemj/article/viewFile/355/317>
- [37] J.J.J. Davis; “Towards a Cognitive Neuroscience of Peace and Universal Values - Focus Issue Featuring Jeffery Jonathan (Joshua) Davis’ Work.” In: *JCER - Journal of Consciousness Exploration & Research*, H. Hu and M. Wu (Editors). Vol. 6, Issue 5, (May 2015).
- [38] D.H. Meadows, D.L. Meadows and J. Randers; Beyond the Limits - Confronting Global Collapse Envisioning a Sustainable Future. (USA: Chelsea Green Publishing Co., 1992).
- [39] HeartMath Institute; “Be Generous, Do for others: You’ll Be Happier”. Online article (2015). Accessed 8 December, 2015: <https://www.heartmath.org/articles-of-the-heart/generous-others-youll-happy/>
- [40] T. Lewis, F. Amini and R. Lannon; A General Theory of Love. (USA: Vintage Books, 2000).
- [41] Free Dictionary. (Farlex Inc. 2012). Accessed 8 December, 2015: [www.thefreedictionary.com](http://www.thefreedictionary.com)