Research Essay

A System Dynamics Approach to Modelling an Economy Based on Actions of Kindness

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Abstract

In this paper we explore the possibility of an economy based on actions of kindness with the aid of system dynamics and systems modelling. We describe what we consider the most relevant elements of such a system of relationships that allows for the exploration of such an economic paradigm to be manifested and sustainable for small, medium and large populations of human-inter-associations. We consider human interaction based on such a currency of exchange (actions of kindness) to be another complementary part, together with our previous work on inner peace and social harmony, toward the manifestation of the ancient dream of planetary peace and the Peace Propagation Process. We also introduce the reader to a set of terms (soft and hard variables) that are fundamental parts associated with the system's driving forces, which allow the reader to deepen his or her understanding of the synergistic effects of the human spirit (spiritual values) and its interaction with physical intentional actions based on the creation of individual and collective knowledge and meaning that underlie any successful endeavour of community, together with a long term vision towards a better and more harmonious planetary arrangement.

Keywords: Actions of kindness, economy, system dynamics, modelling, inner peace, peace propagation, social harmony.

Introduction

Throughout at least the last six thousand years of history, many humans and cultures have pursued inner peace and social harmony. Inwardly, inner peace has been described as a state of being peace [1-2], which is often associated to a relationship with The Creator, and ideally allows for the embodiment of spiritual values that are expressed outwardly through interactions and relationships with others and the environment.

Based on many texts of ancient and modern wisdom [3-6], and modern science and philosophy [7-11], we conjecture that as people mature and unite for a vision of peace and share it with a commitment that is translated ethically and morally as the foundation for social harmony, this will manifest in social dynamics with profound effects in political, economic and management science and the use of technology without precedent.

It seems to us that this is a relatively gradual transformation, though it can accelerate for periods of time. In any case, it must take place first on a small scale and from there move integratively to

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a larger scale, from the individual to the family, the community, the city, and then nation and eventually planetary wide. Every level in this nested hierarchy and network of complexity ought to contribute in this process in multiple feedback loops [12].

In modern days, to design an economy based on peace and actions of kindness, for short, an **Actions of Kindness based Economy**, we would need to combine energy and land management with a science based technology and integrate that with a values based decision making process [13].

It seems to us that only then will we start to move to this kind of scenario, whereby humanity may enjoy a long period of individual wellbeing and social harmony. This process can be described systemically with the aid of system dynamics diagrams, in order to gain insight into the complexities and better understand policies and courses of action to achieve such a vision. This is the purpose of this work.

The first part of this paper will deal with a detailed description of the system and its feedback loops. In the second part we will focus on analysis and the different kinds of dynamics that such a system may display. Finally, we will mention future perspectives and the potential use of this seminal model for a small community. This, we conjecture, will support the process of exploration and understanding of the dynamics of larger groups of people in cities or nations with cultural diversity who would embrace an *Actions of Kindness (AoK)* economy based system. We foresee that such an endeavour will better equip mankind in guiding the destiny of humanity towards more peaceful scenarios.

Before continuing with the reading of this paper, we recommend the reader to take a moment and familiarise him or herself with the terms, concepts and variables used as they are defined in the glossary at the end of this paper.

Description of the system

Here we first introduce an overview of the complete model, followed by a detailed description of the key feedback loops of the system and some of the relationships between variables.

It is important to note that the state variable or level *Inner Peace (IP)*, is part of the *Level of Inner Peace Subsystem (LIPS)* in the model presented here, and has been previously described and modelled in [1] and therefore it could be included as a set of projections of possible scenarios or as the whole subsystem *LIPS*, as part of a larger model.

Diagram 1 portrays a set of relationships between relevant aspects of this system as follows: *Actions of Kindness (AoK), Perceived Kindness (PK), Perceived Kindness Dissipation (PKD), Time Dissipation Delay (TDD), Inner Peace Time Delay Factor (IPTDF), Salient Factor (SF), Level of Inner Peace Subsystem (LIPS), Net Carrying Capacity Threshold for AoK (CCTA), Individual Threshold for AoK (IT), Number of People in the Community (NPC), Carrying Capacity Threshold for Number of People (CCTP), Quality of Community Space (QCS), Rate of new People Entering the Community (REC), Rate of Resignation from the Community (RRC), Basic Needs & Comfort Factor (BNCF),* and *Resource Availability Factor (RAF).*

Diagram 1

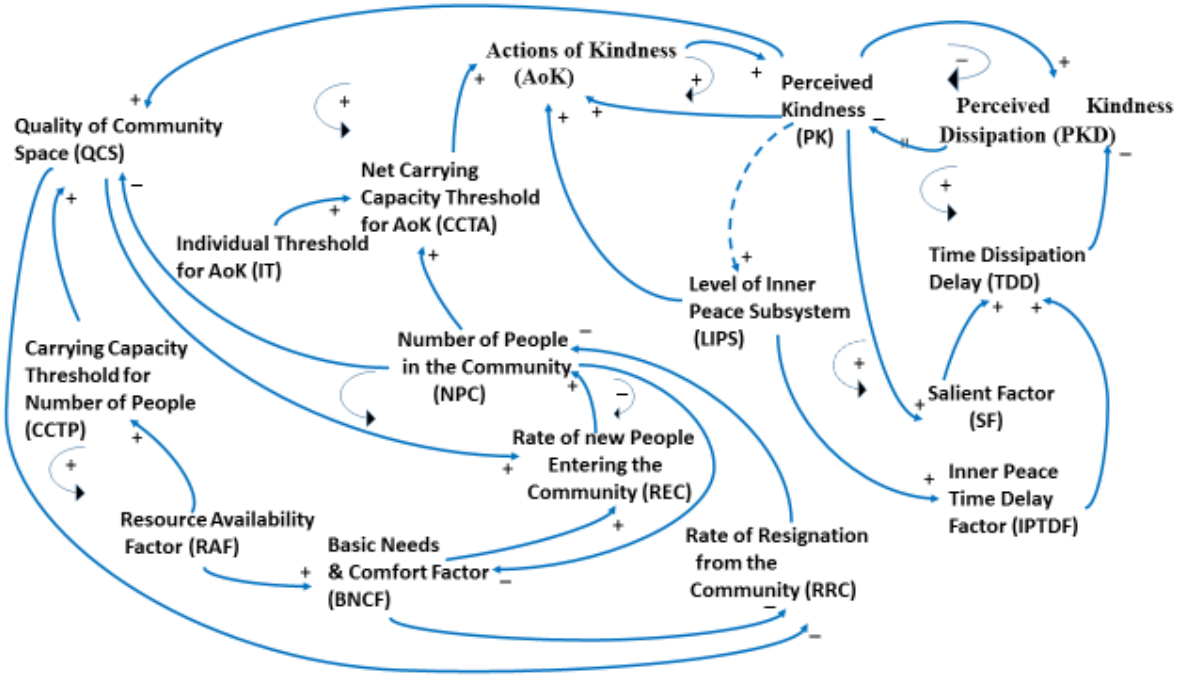

Diagram 1. displays an *Actions of Kindness (AoK)* economy based system dynamics model with its reinforcing (+) and counterbalancing (-) feedback loops as a design for future simulation models.

The element *PK* is a main level (state variable) of this system while *AoK*, for example, represents a flow (rate of change) that influences the behaviour of the level of *PK*. Also, we can appreciate that *LIPS* influences *AoK*. It is important to note that the level of *IP* is a state variable that has been treated and described thoroughly in previous work [1].

From the above Diagram 1, we have identified eight (8) feedback loops as follows:

1. Positive feedback loop concerning *Actions of Kindness*; an increase in *AoK* causes an increase in *PK* and an increase in *PK* in turn causes an increase in *AoK*.

Diagram 1.1 Causal-loop diagram of the relationship between *AoK* and *PK*.

2. Negative feedback loop concerning *Perceived Kindness Dissipation*; an increase in *PK* causes an increase in *PKD* and an increase in *PKD* causes a delayed decrease in *PK*.

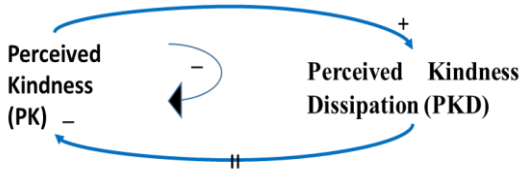

Diagram 1.2 Causal-loop diagram describing the effect of *PKD* on *PK* and vice versa.

3. Positive feedback loop concerning *Time Dissipation Delay* and *Salient Factor*; an increase in *PK* causes an increase in *SF* and an increase in *SF* causes an increase in *TDD*, leading to a decrease in *PKD*, then feeding back to an increase in *PK*.

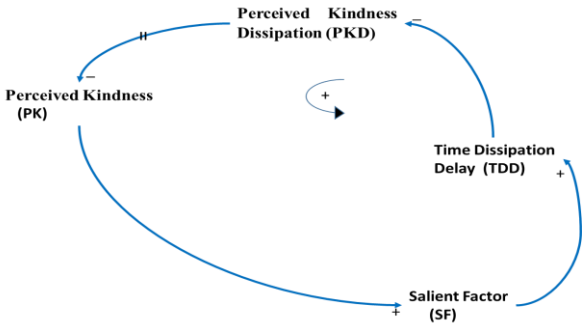

Diagram 1.3 displays the positive feedback loop that describes the dynamics of the state variable *PK* and its circular reinforcing relationship with *SF*, *TDD* and *PKD*.

4. Positive feedback loop concerning *Level of Inner Peace Subsystem*; an increase in *PK* causes an increase of the variable *Quality of the Environment* which is part of *LIPS* and such an increase eventually will cause an increase in *Inner Peace Time Delay Factor* (*IPTDF)* through the variable *IP* which is also part of *LIPS*. This in turn causes an increase in *TDD*, leading to a decrease in *PKD* and then feeding back to an increase in *PK*. It is important to remember that *LIPS* could be substituted with the variable *IP* for simplicity, always keeping in mind that *IP* is affected by many other variables and factors [1] apart from the ones included in the *AoK* system. The causal relationship between *PK* and *LIPS* is established through *Quality of the Environment* (a variable in *LIPS*), which is directly influenced by *PK* in the same direction. Hence the relationship between *PK* and *LIPS* is illustrated with a dashed line and a positive sign as shown in Diagram 1.4.

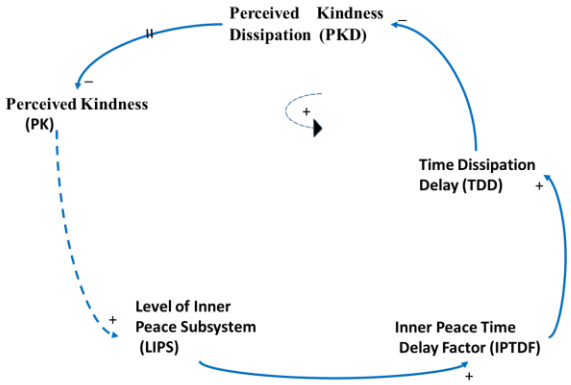

Diagram 1.4 displays the circular causal influences involving the different variables that contribute to the development of *PK* including the subsystem *LIPS.*

5. A positive feedback loop concerning *Quality of Community Space* and *Number of People in the Community*; an increase in *AoK* causes an increase in *PK* and an increase in *PK* causes an increase in *QCS*. An increase in *QCS* causes an increase in *REC*, which in turn increases *NPC* and this leads to an increase in *CCTA*, feeding back to an increase in *AoK*.

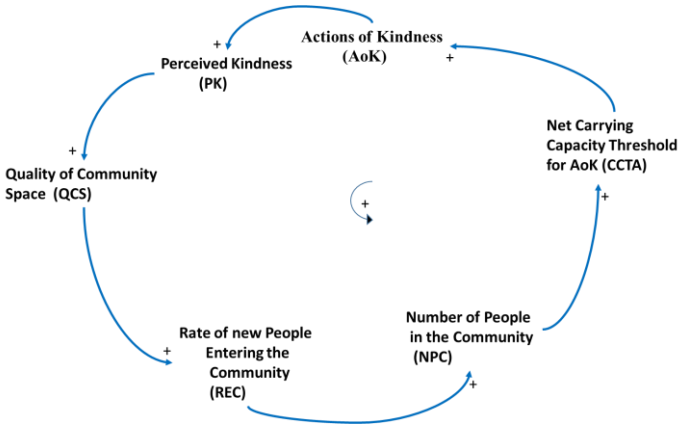

Diagram 1.5 causal loop that describes the dynamics of *QCS* and *NPC*, in a circular causal relationship with *AoK* and *PK*.

6. A positive feedback loop concerning *Rate of Resignation from the Community*; an increase in *AoK* causes an increase in *PK* and an increase in *PK* causes an increase in *QCS*. An increase in *QCS* causes a decrease in *RRC*, which in turn causes an increase in *NPC* and this causes an increase in *CCTA*, feeding back to an increase in *AoK* in the community.

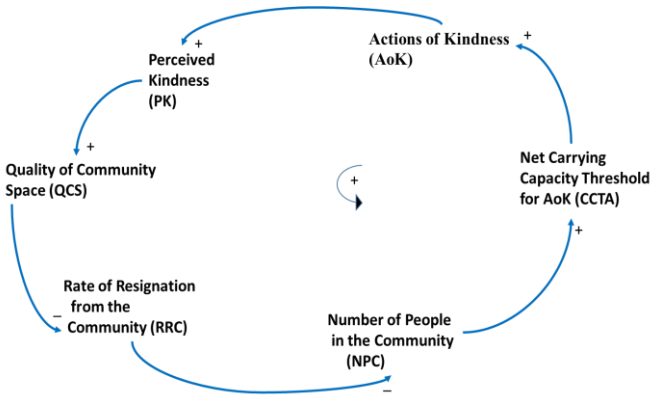

Diagram 1.6 shows the positive feedback loop that governs the behaviour of *RRC* and *AoK*.

7. Negative feedback loop concerning *Quality of Community Space* and *Rate of new People Entering the Community*; a decrease in *NPC* causes an increase in *QCS*. An increase in *QCS* causes an increase in *REC* and this in turn feeds back to an increase in *NPC*.

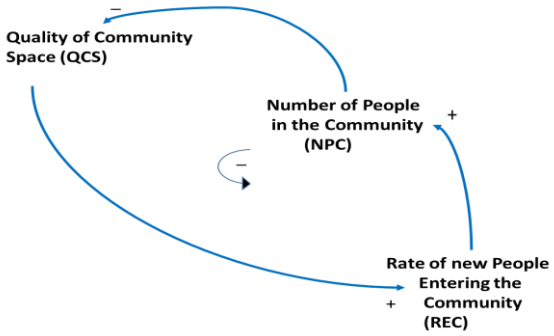

Diagram 1.7 depicts the negative feedback loop that shapes the dynamics of *QCS*, *REC* and *NPC* towards an equilibrium or an oscillatory behaviour.

8. Negative feedback loop concerning *Basic Needs & Comfort Factor*; a decrease in *BNCF* causes a decrease in *REC*. A decrease in *REC* eventually causes a decrease in *NPC* and this in turn feeds back to an increase in *BNCF*.

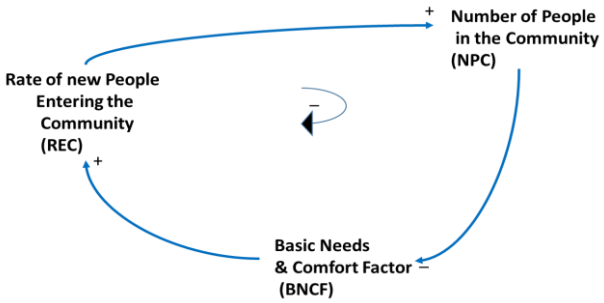

Diagram 1.8 shows the influence of *BNCF* on *REC* as part of a negative feedback loop.

The variable *BNCF* indirectly influences the elements of *PK* and *AoK* through *NPC*. *BNCF* is influenced and restricted by *RAF* and *NPC*. When this negative loop gains dominance, the system will display a reduction or even a reverse in growth and initially result in a decrease in *NPC*. This will in turn cause, in parallel, an increase in *QCS* via the restriction imposed by *RAF*, while also causing a decrease in *QCS* via a decrease in *AoK*.

Overall, *AoK* and *PK* would each be affected by *QCS*, which as already explained, can fluctuate both by the influence of *AoK* and *RAF* via *NPC*. It is important to mention that if the community succeeds to provide for the basic needs and comforts of its members then the system will display a positive growth also restricted by its carrying capacity and resource restriction.

Analysis of the system and system dynamics model

In the previous section we described the causal relationships of the elements of the model and now we will analyse its dynamics. The structure of the system determines the behaviour of the system, and from the model we can observe that for as long as the positive feedback loops remain dominant, the system will continue to grow, resulting in a continuous increase of *AoK* [14]. However, our model also contains a few balancing feedback loops, which may cause the system to oscillate and ideally to stabilise or find some form of metastability [15].

In the first part of our analysis, we focus on the left-hand side of the model, shown in Diagram 1.9.

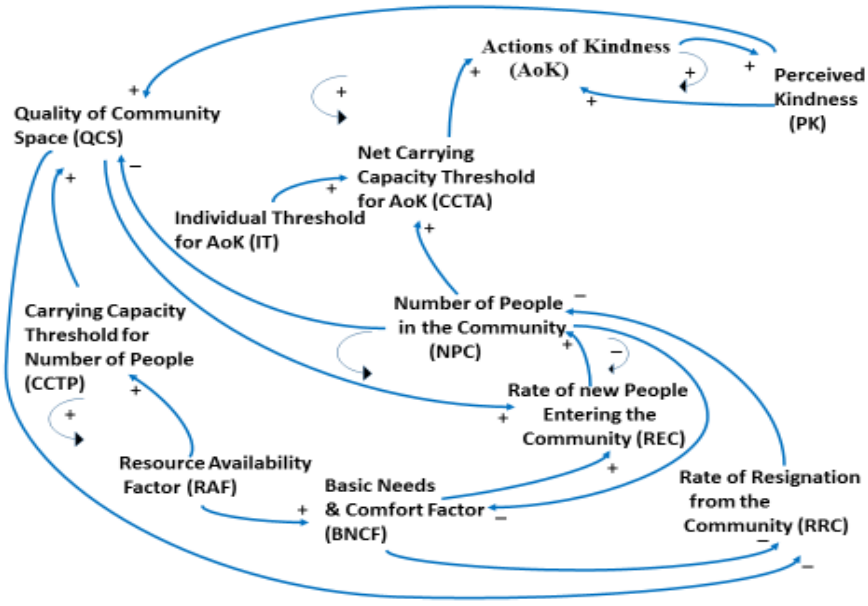

Diagram 1.9 shows the left-hand section of Diagram 1 and illustrates the dynamics concerning community development and its implications for *AoK*.

We will start our analysis with one (1) of these negative feedback loops. One (1) possible relationship between *BNCF* and *NPC* is shown in Figure 1.

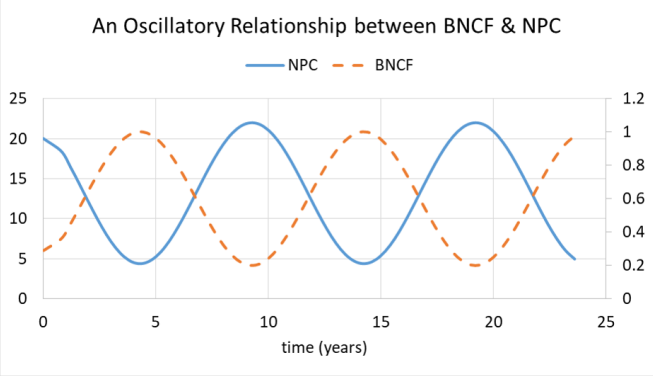

Figure 1 displays the oscillating behaviour of *BNCF* (orange dashed line) and *NPC* (blue line). The values on the x-axis represent time (*t*) and the values on the left y-axis represent the number of people in the community and the right y-axis displays *BNCF* between zero (0) and one (1). The values for *t* and *NPC* are arbitrary and were chosen for illustrative purposes.

Here we can appreciate the alternating and out of phase behaviour of the two (2) graphed variables. As *NPC* increases *BNCF* starts to decrease. This means, less people have their basic needs met in terms of, for example, food, infrastructure and electricity, via the influence of *RAF*. A community living on a piece of land will meet a limit on food production capacity and therefore how many people it can sustain. A decrease of *BNCF* potentially leads to a drop of *NPC*, which in turn leads to an increase in *BNCF* that, without any other influences, would cause the system to display an oscillatory behaviour, as shown in Figure 1. It is important to note that a community has several mechanisms at its disposal to alter such an oscillatory behaviour and achieve a significant reduction in the amplitude values of the oscillations together with a careful balance between an increase and decrease in frequency, ideally leading to an optimum. A complex system like this one may enter a metastable regime, leading to an equilibrium or a set of equilibriums as time goes by. This, we conjecture, could lead to a more stable and desirable behaviour of the system, accompanied by a wiser land-energy management strategy, together with a vibrant community environment. Furthermore, the community may implement policies that prevent a continuous and explosive growth pattern and therefore further stabilise the system until the next cycle of growth is carefully planned.

Figure 2 shows the dynamics of a set of growth cycles carefully planned to allow for a wise use and increase of the resources available to cope with more growth. Every cycle of growth is restricted by a carrying capacity that eventually is met until the proper planning and new resources take effect. Note that as the system is ready to grow in *NPC*, there is an increase in resources available, which allows it to cope efficiently with the initial growth for every cycle.

With this understanding we can now move on to analyse the relationship between *AoK*, *NPC* and *QCS*. We will introduce three (3) different scenarios of the system's behaviour, which are depicted in Figure 3, 4 and 5.

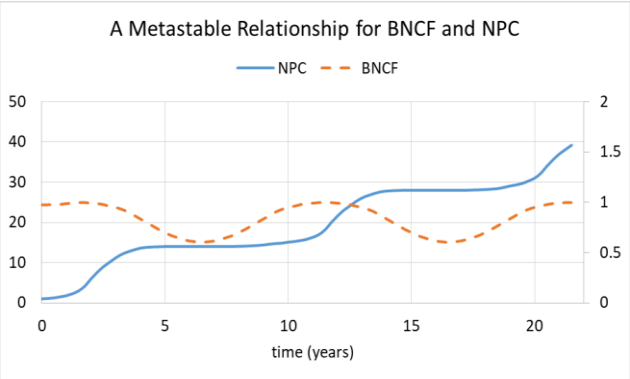

Figure 2 shows the oscillating behaviour of *BNCF* (orange dashed line) and the periodic growth process of *NPC* (blue line). The values on the x-axis represent time (*t*) and the values on the left y-axis represent the number of people in the community and the right y-axis displays *BNCF* between zero (0) and one (1). The values for *t* and *NPC* are arbitrary and were chosen for illustrative purposes.

In Figure 3, we depict a scenario where the carrying capacity and therefore the limits of the system are ignored and as a consequence of that we observe an overshoot and collapse scenario since the system has grown beyond its limit [16-17]. The variable *NPC* grows exponentially and initially is accompanied by an exponential growth of *AoK* and *QCS*. However, when *NPC* is allowed to grow unchecked and the maximum carrying capacity for *NPC* is reached, the growth process eventually reverts with a steep decline accompanied by a similar drop of *AoK* and *QCS*.

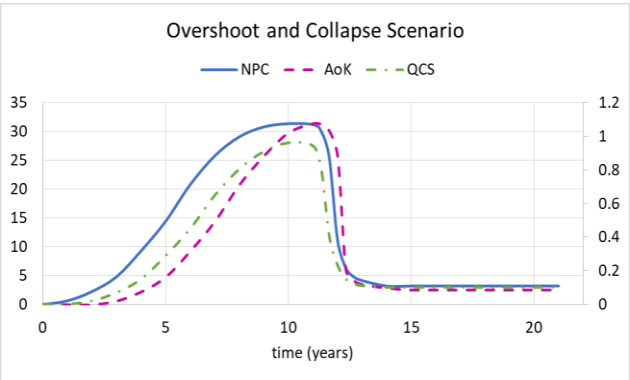

Figure 3 depicts the exponential growth followed by a steep decline and potential stabilisation at a very low value of *NPC* (blue line), *AoK* (pink dashed line) and *QCS* (green dashed & dotted line). The values on the x-axis represent time (*t*), the values on the left y-axis represent the number of people in the community and the number of actions of kindness performed and the right y-axis displays *QCS* between zero (0) and one (1). The values for *t*, *NPC* and *AoK* are arbitrary and were chosen for illustrative purposes.

Such a scenario occurs if the number of people is allowed to grow too fast and too close to the maximum carrying capacity, most likely the consequence of short term linear thinking that follows the idea of more people in the community equals more *AoK*, together with a situation where the effects of the negative feedback loop are inconsequential for a period of time. For example, when there is a great amount of resources readily available and being consumed without consideration for replenishment, allowing the community to grow quickly without a noticeable impact on the resources available for a limited period of time. However, after a period of prolonged growth, the people in the community can no longer be sustained by the available resources and the previously unchecked growth now would leave, for example, the land resources depleted, which compromises food production and therefore the community would no longer be able to sustain itself or provide the proper quality of space based on *AoK*. The same principle applies to other resources such as housing, energy and water amongst others. This now eminent lack of resources leads to a sharp decline of *BNCF* and the negative feedback loop begins to operate with its full strength and the consequences thereof we can observe in the steep decline or collapse of *NPC*, *AoK* and *QCS*.

Since such a system of behaviour is undesirable, a possible response that may come to mind in order to avoid such an outcome is depicted in Figure 4. Here we can observe a continuous cycle of oscillations where the system neither collapses nor stabilises.

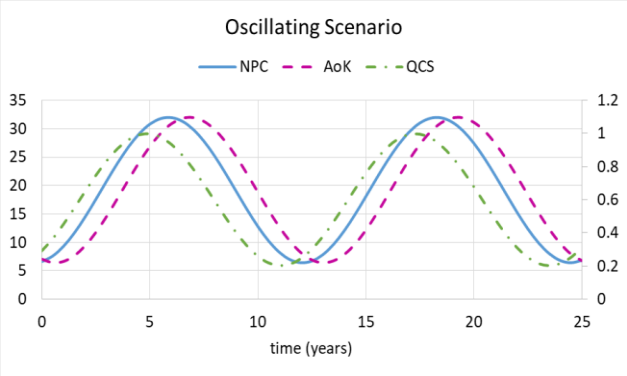

Figure 4 illustrates the oscillatory behaviour of *NPC* (blue line), *AoK* (pink dashed line) and *QCS* (green dashed & dotted line). The values on the x-axis represent time (*t*), the values on the left y-axis represent the number of people in the community and the number of actions of kindness performed and the right y-axis displays *QCS* between zero (0) and one (1). The values for *t*, *NPC* and *AoK* are arbitrary and were chosen for illustrative purposes.

Such system behaviour is possibly the consequence of a 'letting things run' approach. In such a scenario *NPC* rises and brings about an increase of *AoK* accompanied by an increase in *QCS*, which in turn leads to a further increase in *NPC*. However, as we have shown in Figure 3, such an increase when left unchecked will eventually lead to a decrease in *BNCF* and subsequently to a decrease in *NPC*, which leads to a decrease of *AoK* that in turn causes a decrease in *QCS*, which once again further contributes to a decrease in *NPC*. Eventually *NPC* will fall below a certain threshold, which allows for *BNCF* to rise again sufficiently in order to then see *NPC* also

rise again and repeat the cycle described above, hence entering into an ongoing cycle of oscillations, where the drops could be attenuated by preventing the system to reach values too close to carrying capacity, as shown in Figure 4. These oscillations may vary in frequency and amplitude depending on the resilience and flexibility that the community displays when faced with the above described challenges.

Following in Figure 5, we introduce the reader to a scenario with a stable and hence far more desirable outcome. Here we can observe cycles that consist of a period of exponential growth followed by a period of zero growth. Those zero growth periods are essential in order to stabilise the process, prepare for the next cycle of growth and avoid the undesirable behaviours we observed in the previous two (2) scenarios. Such a stabilisation process, for example, can be achieved by the implementation of carefully designed policies and equally carefully applied management strategies and technologies as already mentioned previously. The commitment and governing value system of the community will be reflected in this decision making process. Some communities, for example, may have their foundations in spiritual values and a harmonious relationship with the land and wildlife, and therefore condition their growth to have a low ecological impact while guaranteeing food for every member of the community, as well as a peaceful place to be. To achieve that, the community needs to carefully plan a gradual and well thought-through growth process.

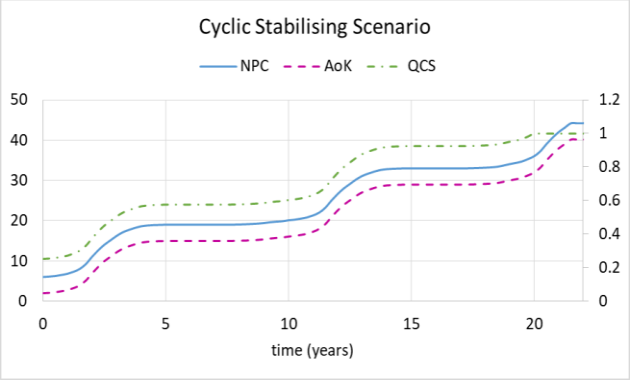

Figure 5 shows the cyclic behaviour of *NPC* (blue line), *AoK* (pink dashed line) and *QCS* (green dashed & dotted line). The values on the x-axis represent time (*t*), the values on the left y-axis represent the number of people in the community and the number of actions of kindness performed and the right y-axis displays *QCS* between zero (0) and one (1). The values for *t*, *NPC* and *AoK* are arbitrary and were chosen for illustrative purposes.

As we have described before, *QCS* is influenced by *NPC*. *QCS* increases via an increase in *AoK* catalysed by an increase of *NPC*, which raises the vibrancy of the community causing more people to participate in *AoK*. Meanwhile, as we have observed previously, *NPC* can also cause a decrease of *QCS*, since *QCS* is restricted by *CCTP* and *RAF*. When *NPC* approaches its carrying capacity threshold it causes *QCS* to decrease, since for example, more people results in a greater need for dwellings and more food that together affect *QCS*, causing it to drop.

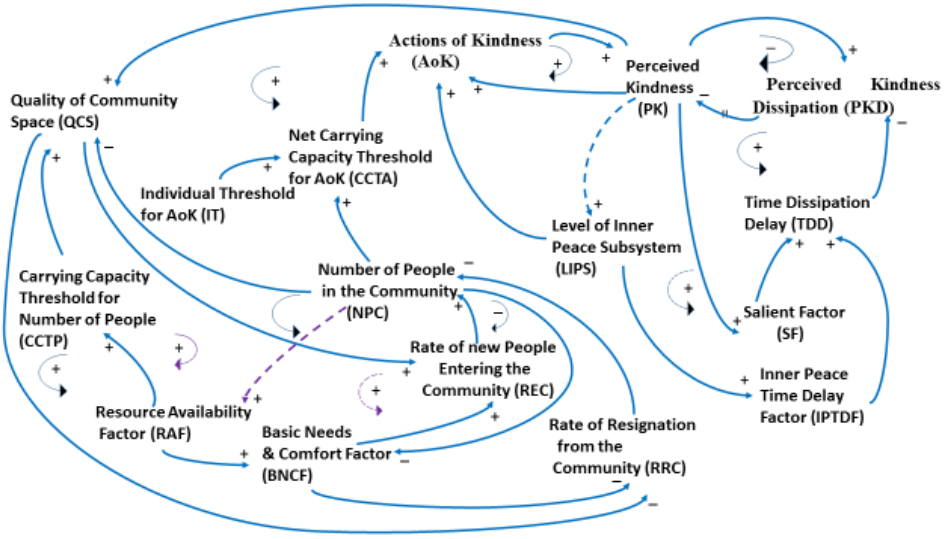

Diagram 1.10 displays the system diagram of the model as shown in Diagram 1, however, here with an additional reinforcing connection between *NPC* and *RAF*. The purple dashed line displays this addition to Diagram 1 and the resulting two (2) positive feedback loops are also shown in purple.

However, we could also consider the possibility that an increase in *NPC* could result in a higher *RAF*, since a community with more people could potentially perform more actions of kindness, which in turn would result in an increase of available resources (for example, infrastructure, food, etc.) that now become available to the community. Such an increase in resources would lead to a raised *CCTP* value, which in turn would cause an increase in *QCS*. Such a relationship has been illustrated by the purple dashed line in Diagram 1.10. This proposed additional causal relationship between *NPC* and *RAF* could bring about a situation where more people no longer automatically result in a decrease of the quality experienced in the community. The increase in *AoK* is a reflection of the increased cooperation amongst community members and vice versa, together with an increase of service to one another.

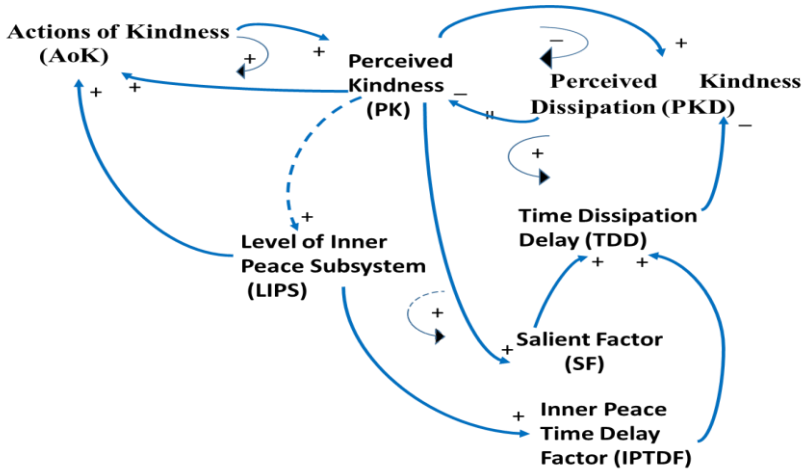

Diagram 1.11 shows the right-hand section of Diagram 1 and illustrates the dynamics concerning inner peace and perceived kindness, and their influence on *AoK*.

In the previous three (3) scenarios of our analysis we have focused on the relationship of the variables *NPC* and *QCS*, and their impact on the actions of kindness performed in the system, a relationship that is depicted predominantly on the left-hand side of our model in Diagram 1. In this second part of our analysis we shift our attention to the right-hand side of the model as shown in Diagram 1.11.

In the following analysis, we have chosen to model *IP* as a set of projections of possible scenarios rather than using *LIPS* and here we present two (2) possible scenarios of how *IP* affects *AoK* and *PK*.

In the following scenario displayed in Figure 6, we assume a community where *IP* is relatively low, stationary and initially found in a state where *AoK* and *PK* were at a peak, however, with a significant outflow of highly developed spiritual people. Such a scenario may represent a community which is left with members that show very little spiritual maturity and whose attention is focused predominantly on survival needs with a dose of common goodwill [18]. Such a community would perform relatively few actions of kindness, since generally speaking, its members lack spiritual maturity and high levels of altruism that have their foundation in high levels of *IP*, and that is a prerequisite for high levels of *AoK*. Furthermore, small levels of *AoK* cause *PK* to diminish and when coupled with a low level of *IP* leads to a decrease in *IPTDF*. This in turn leads to a decrease in *TDD* and eventually causes *PK* to dissipate more quickly. Low levels of *PK* will cause smaller *SF* values as a consequence of a drop in *AoK* and *PK* values, which will further decrease *TDD* and lead to the dissipation of *PK* even more quickly. Figure 6 displays the dynamic relationship of *IP*, *PK* and *AoK* for the above described scenario.

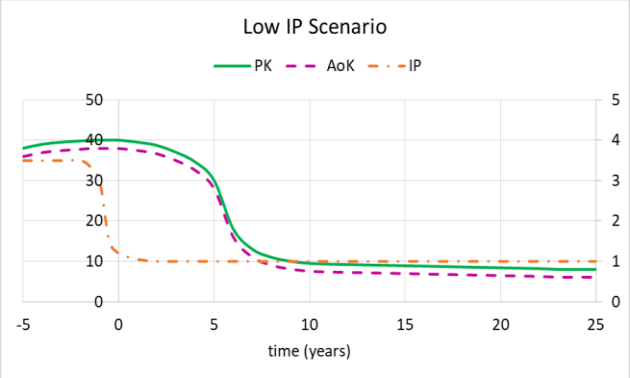

Figure 6 illustrates the steep decline of *PK* (green line) and *AoK* (pink dashed line) triggered by a decrease of *IP* (orange dashed & dotted line). The values on the x-axis represent time (*t*), the values on the left y-axis represent the number of actions of kindness performed and the kindness perceived by the members of the community and the right y-axis displays *IP*. The values for *t*, *PK* and *AoK* are arbitrary and were chosen for illustrative purposes.

It is important to note that even the presence of only one (1) highly spiritually evolved man or woman (a righteous being, a Tzadik or Tzadikah) could significantly impact the community's capacity to perform actions of kindness due to the transformative catalytic nature that such a

righteous being may exert on the community. Such a process of growth in consciousness has been described in previous work [18].

In another scenario as displayed in Figure 7, we have modelled a community that displays a sudden increase in *IP*.

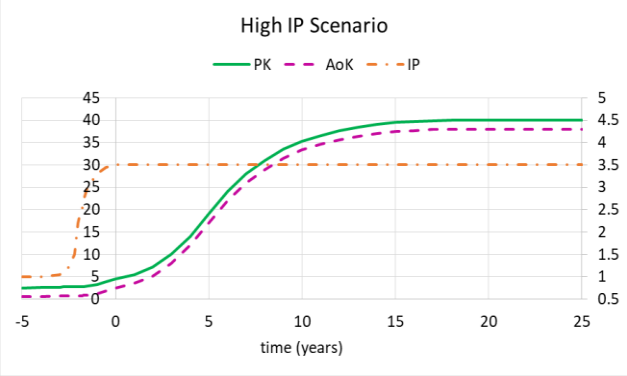

Figure 7 illustrates the steep increase of *PK* (green line) and *AoK* (pink dashed line) triggered by a sudden increase of *IP* (orange dashed & dotted line). The values on the x-axis represent time (*t*), the values on the left y-axis represent the number of actions of kindness performed and the kindness perceived by the members of the community and the right y-axis displays *IP*. The values for *t*, *PK* and *AoK* are arbitrary and were chosen for illustrative purposes.

In such a community, its members have reached a relatively high level of spiritual maturity where the community is predominantly comprised of students of the higher spiritual laws as explained in [18], showing a greater altruistic tendency above common goodwill. Such a community, we would expect to perform high numbers of *AoK* as an expression of altruistic love and care for their fellow human beings. Such an increase in *AoK* would cause *PK* to increase, while the high level of *IP* also leads to an increase in *IPTDF*. This in turn leads to an increase in *TDD* causing *PK* to dissipate more slowly. Moreover, high levels of *PK* will cause a larger *SF*, which will further increase *TDD* and cause *PK* to dissipate even more slowly, resulting in more actions of kindness performed.

Conclusion and Future Perspective

So far the analysis we have presented is illustrative of the two (2) main parts of the model which need to be taken together as a whole. The "left side" of the model captures the more physical aspects of the dynamics, while the "right side" captures the more spiritual aspects.

It is important to note that in ancient Israelite tradition, the left side of the Tree of Life is attributed to the quality of Justice while Mercy is attributed to the right side. When we apply this analogy to our model, we could view the left side to be connected to Justice and the harsh corrections imposed by nature as a consequence of human behaviour, particularly when we abuse Mercy and kindness without the proper understanding of the limit to exponential growth and the

detrimental effects it can have in the system. In that regard, we have given an example of the effects that the depletion of resources can have on a community in relationship to the dynamics of *AoK*, as illustrated in Figure 3. We propose that we can connect the right side of our model to the attribute of Mercy and its effect on how the attainment of Inner Peace contributes to an increase of both *AoK* and *PK* and that comes with an admonition to properly manage the limits of a physical system or community which is thriving on an economy based on *AoK*. As it has been written, "There is no true justice unless mercy is part of it" [19] or, in other words, true Justice always comes with the wise ministry of Mercy.

From our system description and analysis, we have already derived some valuable insights regarding potential leverage points and courses of action that communities can utilise and embark on to manifest an economy based on actions of kindness, as well as the synergies present in the system, for example, the harmonisation of resource management and spiritual growth, represented in our model by *RAF* and *LIPS*.

In our model we included *LIPS* as a set of projections of possible scenarios for *IP* rather than including the whole subsystem *LIPS*. For future work we foresee the potential to model the system dynamics described in this paper, including *LIPS* as a subsystem, as well as our above mentioned community model. The community model could be inserted into this model of actions of kindness where we currently find the variable *QCS*.

The scenarios we introduced in our analysis may serve the interested reader as a starting point for some deeper reflection and pondering on the crucial question of what kind of world he or she would like to live in and to pass on to future generations to come, as well as the question of how to manifest such a world. We are convinced that one of the most important elements is a deep foundation in spiritual values, or a personal relationship with The Creator, together with the practical application of tools, such as system dynamics and management science, in order to address the logistics of the delivery of human basic, intellectual and aesthetic needs.

Our preliminary analysis suggests that any community can and should, in principle, manage its growth process diligently, always keeping in mind *RAF* and *QCS* in order to design a sustainable and achievable growth process resulting in an increase of *AoK* without experiencing setback or collapse scenarios. At the same time, our model emphasises the importance for each individual to master Inner Peace, since it is a vital driving force for actions of kindness in the quest for social harmony. We have identified the variables *IP* and *AoK* as two (2) of the potential key elements in the system dynamics of this social and economic ideal.

It is important to note that such a shift in social and economic paradigms and structures will require careful planning and diligence and will therefore be a gradual process from the microscopic to the macroscopic human community. A possible beginning may be with some individuals who inspire and support small communities to undergo such a transition. From here the transition process can continue further to larger communities, regions, nations and eventually the whole planet.

The economy of actions of kindness is simultaneously a service and an investment, since such actions promote inner peace and social harmony and may further inspire others to participate, while holding the potential of being a stepping stone towards planetary peace with active human spiritual and biological agents who are self-governed and self-realised sovereign beings.

The assumption posed by Adam Smith in the eighteenth century that the individual choices for best self-interest will add up to the best collective interest, is now widely regarded inaccurate [20-21] unless we consider the possibility that self-interest should be divorced from selfishness and remarried to self-mastery, self-determination, self-responsibility and self-governance, as the hallmarks of maturity to interact with others in self-governed communities. We need to emphasise that the word 'self' as used here, has a different connotation than any idea about a model of self that is based on information processing only [22-23] and incorporates spiritual values [7] that modulate human consciousness towards altruism and goodwill. This leads to the notion that the economic model of actions of kindness proposed in this paper may serve as the true solution to the economics of the best collective interest. The economy of actions of kindness goes beyond pure economics and includes values, moral and ethical principles, transcending the survival based and profit driven principles of the current economic system and would be reflective of a human species evolving towards higher spiritual values, peace and holiness [9].

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Glossary

Actions of Kindness (AoK):

An Action of Kindness is an event that entails an interaction between a giver and a recipient or receiver, be it an individual or a group. Such an action stands as an opportunity to do good and have a positive impact primarily for the recipient, however, also with a spiritual or emotional benefit for the giver. The giver enjoys the act of giving or doing good. The reader must note that there are indirect benefits from such actions of kindness, which also have positive consequences in other people's lives and communities at large.

In folk wisdom we could describe it as 'what goes around comes around.' At a deeper level the laws of cause and effect may create social feedback loops of happiness and inner peace based on interactions between people that are intended to manifest kindness towards the other.

Actions of kindness differ from actions based only on good intentions in a way that consider more deeply the real needs of the receiver above only the good intention and the different biases, for example cultural or religious biases, of the giver [24]. Actions of kindness have no strings attached to the recipient and can be regarded as genuine acts of unconditional love. In a sense, for the knower of God, actions of kindness are inspired by The Creator and fuelled by spiritual values.

Perceived Kindness (PK): The perception of the quality of being kind by an observer via his or her cognitive and perceptual capacity according to his or her own learned behaviours, cultural and embodied spiritual values. It can be understood as the perception that an observer experiences regarding another human being and his or her disposition to act kindly towards others.

Perceived Kindness Dissipation (PKD): It is a rate or flow that represents the speed at which Perceived Kindness tends to dissipate in brain dynamics of individuals in relationship to others and the environment. It is affected by the level of kindness in the system and a time dissipation delay that determines its own

exponential decay. Left alone to its own intrinsic dynamics, without the increase of kindness in the system, it will decrease (dissipate) to zero (0).

Time Dissipation Delay (TDD): Is the time that it takes on average for the rate *PKD* to drop. It is important to note that a change in the rate *PKD* modulates the dynamics of the level of perception of kindness *(PK)* in the system.

Inner Peace Time Delay Factor (IPTDF): This factor is determined by the level of Inner Peace *(IP)* and increases as *IP* increases) and it is always a positive value greater or equal to zero (0). This factor directly influences *TDD*.

Salient Factor (SF): A quantity that is modulated by Perceived Kindness that in turn affects *TDD*. This factor can take values between zero (0) and one (1).

Level of Inner Peace Subsystem (LIPS): This subsystem provides a model that describes the dynamics of Inner Peace (*IP*) and it can be any projection, prediction or value, as well as a causal system dynamics model, like the one described in [1] that connects through a variable that models the Quality of the Environment *(QE)*. Basically, IP=*f* (QE) where *LIPS* is the function *f*.

Net Carrying Capacity Threshold for AoK (CCTA): The maximum value that the rate *AoK* can take, which is associated with the maximum amount of kindness that the system or community can generate per unit of time.

Individual Threshold for AoK (IT): It is a measure that influences the carrying capacity associated with individual resilience *(CCTA)*, which determines the maximum value that the rate *AoK* can take. It reflects a limit associated with the need for physical, mental and emotional regeneration.

Number of People in the Community (NPC): A state variable that quantifies the number of people in the system or community at a certain time.

Carrying Capacity Threshold for Number of People (CCTP): The maximum number of people that the community can support at any given moment in time.

Quality of Community Space (QCS): A level or state variable that quantifies the subjective experience of the quality of environment and relationships that the community provides. When normalised, *QCS* takes values between zero (0) and one (1).

Rate of new People Entering the Community (REC): A quantity that describes the increase in the number of people per unit of time.

Rate of Resignation from the Community (RRC): A quantity that describes the decrease in the number of people per unit of time.

Basic Needs & Comfort Factor (BNCF): A quantity that describes to which degree the basic survival needs and comforts are met for the members of the community. Zero (0) means a total lack of basic needs and comforts and one (1) represents a total satisfaction when the basic survival needs and comforts of the community are met.

Resource Availability Factor (RAF): A quantity that is associated with the availability of resources like infrastructure, land and food for the community.

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