



The Win-Win-Win Papakonstantinidis Model: Sensitization, Towards the Absolute Cooperation-The Marginal “Angels Moment”

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	<p>ABSTRACT</p>
<p>2016 Research Leap/Inovatus Services Ltd. All rights reserved.</p> <p>DOI: 10.18775/jibrm.1849-8558.2015.41.3004 URL: http://dx.doi.org/10.18775/jibrm.1849-8558.2015.41.3004</p>	<p>The article deals with the ideal marginal (the Angels moment) situation during and “ending” the sensitization process in a 3-pole bargain A-B and the Community, the “C” factor, that means a better and more sensitized bargaining behavior, towards the absolute human and nature cooperation. The limit of the Sensitization Process is focused on social welfare based on the incompatibilities of other theorems, especially the Impossibility Theorem (Kenneth Arrow, 1951) "Non-Cooperative Game" Theory and the bargaining problem, thus synthesizing, the suggested h_p harmony-equilibrium in a new proposal of bargaining behavior. A new approach on "social bargain behavior" with more grades of 'action-reaction' freedom is examined. The same competitive market rules could provide humanity by a quite different behavior choice, toward the absolute cooperation, the upper limit of the sensitization process-sequence, for producing "social welfare results" especially in LDC, by the peer-pressure operation.</p>
<p>Keywords: "Win - win - win", welfare economics, the Impossibility Theorem (Arrow), the Incompleteness Theorem (Gödel), Pareto Efficiency, Nash Equilibrium</p>	

1. Introduction

As people throughout the world are be moving from the "politically correct" behavior to an unexpected general behavior highlighting other priorities and other internal forces that were previously "under the carpet" (Greek Traditional expression): The "win-win-win papakonstantinidis model" must succeed in different fields: welfare economics, ethics, moral aggregation¹ in order to **a.** have a proper appreciation of the way that both favorable economics and value judgments enter into the formulation of economic policy; **b.** Understand the link between the relevant value judgments and major ethical theories that have a bearing on them, and feel comfortable about the role of these theories in welfare economics; **c.** be able to analyze and comment on economic policy texts and debates that combine ethics and economics.

1.2 Definitions

1.2.1 Welfare Economics

Welfare economics focuses on the optimal allocation of resources and goods and how the allocation of these resources affects social welfare. This relates directly to the study of income distribution and how it affects the common good.

Welfare economics is a subjective study that may assign units of welfare or utility to create models that measure the improvements to individuals based on their personal scales. Welfare economics looks at the distribution of resources and how it affects an economy's overall sense of well-being. With different optimal states existing in an economy in terms of the allocation of resources, welfare economics seeks the state that will create the highest overall level of social satisfaction among its members.

Welfare economics uses the perspective and techniques of microeconomics, but they can be aggregated to make macroeconomic conclusions. Some economists suggest that greater states of overall social good might be achieved by redistributing incomes in the economy. These models the theories behind economic, or allocative, efficiency, suggesting that there exists a point where the social well-being experienced from the allocated resources can hit a maximum, a point considered to be the most efficient. If that point is reached, the economy is functioning in a way that any subsequent changes to raise the feelings of well-being in one area would require the lowering of well-being in another.

¹Kaushik Basu; S M Ravi Kanbur; Amartya Sen (2009) "Arguments for a better world. Vol. 1, Ethics, welfare and measurement: essays in honor of Amartya Sen" Oxford ; New York : Oxford University Press, 2009.

i. Pareto efficiency, or Pareto optimality, is a state of allocation of resources in which it is impossible to make any one individual better off without making at least one individual worse off. The term is named after Vilfredo Pareto (1848–1923), Italian engineer and economist, who used the concept in his studies of economic efficiency and income distribution. The concept has applications in academic fields such as economics, engineering, and the life sciences.

ii. Ethical economics

It is tried a first comprehensive treatment of the major ethical and social issues resulting from the use of ionizing radiation. It covers topics such as nuclear fuel cycles, radioactive waste treatment, nuclear bomb testing, nuclear safety management, stakeholder engagement, cleanup after nuclear accidents, ecological risks from radiation, environmental justice, health and safety for radiation workers, radiation dose standards, the ethics of clinical radiology, and the principles of radiation protection and their ethical underpinnings².

iii. Ethical issues and assumptions underlying standard welfare economics³.

These include:

- the moral significance of consumers' sovereignty, the aggregation of consumers preferences in the concept of the social welfare function;
- the boundaries of the 'society' in whose welfare we are interested;
- the relationship between GDP and some concept of 'happiness';
- and aspects of distributive justice.

Moral Aggregation

o Moral 'Aggregation' is the core of this work, due to its "properties", from the following DEFINITIONS

o Ethics or moral philosophy is a branch of philosophy that involves systematizing, defending, and recommending concepts of right and wrong conduct. The term ethics derives from the Ancient Greek word "ἠθικός" ethikos, which is derived from the word ἦθος ethos (habit, "custom"). The branch of philosophy axiology comprises the sub-branches of ethics and aesthetics, each concerned with values.

o As a branch of philosophy, ethics investigates the questions "What is the best way for people to live?" and "What actions are right or wrong in particular circumstances?" In practice, ethics seeks to resolve questions of human morality, by defining concepts such as good and evil, right and wrong, virtue and vice, justice and crime. As a field of intellectual enquiry, moral philosophy also is related to the fields of moral psychology, descriptive ethics, and value theory

o Aggregation in the futures markets is a principal involving the combination of all future positions owned or controlled by a single trader or group of traders.

o Aggregation in financial planning is a time-saving accounting method that consolidates an individual's financial data from various institutions. It is increasingly popular with advisers for servicing clients' accounts.

o Account-aggregation technology is used when financial advisors gather position and transaction information from investors' retail accounts held at other financial institutions. Aggregators provide investors and their advisors with a centralized view of the investor's complete financial situation, including daily updates.

In practical terms, COMMUNITY, concerned as "Moral Aggregation" consist from

- i. Common Communication Code, (fairs, local dances, songs etc)
- ii. Common ethical (moral) Values that "keep" Community's people in cohesion under the property of "Citizen"
- iii. Community (especially, "Local Community") may (and must) be seen as "Moral Aggregation" for the reasons (among others) that
 - a. A unique local cultural identity
 - b. Local Brand in international/globalize markets
 - c. The local development, round a flag theme, through Senitization

1.2.2 Comparing the "2-win with the 3-win perception

1. Win-win perception: based on when each side of a dispute feels they have won. Since both sides benefit from such a scenario, any resolutions to the conflict are likely to be accepted voluntarily. The process of integrative bargaining aims to achieve, through cooperation, win-win outcomes.

2. The "win-win-win papakonstantinidis model" is-or, may be an extension of the win-win model; based –not only-on when each side of a dispute feels they have won, but even more the two sides feel that their own community has also won, in the context of a social contract between them (moral contract, beyond the strict interpretation of the Law: that's the limit of the sensitization process toward the absolute social cohesion-the "angel's point".

2. Objective and Aims of the Paper

The objective is to prove that "social welfare" exists and can coexist with the capitalist economic model, if and only if it will be based on the contradiction of the relevant literature, thus leading in a 3-polar "contract" between any parties, including the Community (The Intermediate Community- the "C" factor), in a 3-dimensional space.

² Deborah Oughton (2013) Social and ethical aspects of radiation risk management Amsterdam : Elsevier Science, 2013.

³ ECON0074 - Ethics in Welfare Economics

If it is true, then it will be feasible a social welfare policy in a new world that will not resemble the current (centralized structure)

This work intends to approach the bargaining problem by the extension of the Nash Equilibrium (win-win) so that a new

bargaining (win-win-win) Equilibrium the h_{lp}^* will be found out, and to manipulate with Incompatibilities, by the utility theory:

1. The impossibility theorem (1951 Kenneth Arrow: book: Social Choice and Individual Values, as well as the Amartya Sen "liberal paradox"
2. The theorem of incompleteness (Kurt Gödel (1931)
3. The Rawls Theorem on Justice, 1958)- the veil of ignorance
4. the Nash Equilibrium in Nash "Non-cooperative Game Theory 1951(annals of Mathematics,1951 Vol. 54, No. 2 (Sep., 1951), pp. 286-295)
5. The "Pareto optimality in a 3D space according to which, the 3 players (the COMMUNITY included), form a state of allocation of resources from which it is impossible to reallocate so as to make any one individual or preference criterion better off without making at least one individual or preference criterion worse off.

This work intends to prove that "social welfare" can coexist with the capitalist economic model but if based on a "tri-polar" (instead of bipolar) perception of any interaction between people, local communities, organizations, states, blocs Member ...including the Community (The Intermediate Community- the "C" factor), in 3D space, with the community as "rainbow" synthesis/analysis It is the "rainbow concept".

AIM 1 The aim of this theoretical contribution (if it exists) is to highlight the "SENSITIZATION ability" that every one of us either relates to refugees or in countries, whether in claiming or even in our daily transactions It is time to stop looking only personal interest or "individual defense".

In particular, the proposal deals with the collecting, classifying and comparing the theoretical material from various sources on the functioning of Social Welfare Function (SWF), towards building a strong case with logical and coherent arguments, towards the one Triple Pole (A-B-COMMUNITY) Equilibrium (TPE), different from N.E, that leads to the Social Bargaining Solution" (SBS) and coincide with the "optimal" Community Collective Choice (CCC) in order to create a highly versatile tool, "the win-win-win Papakonstantinidis model" of well-formed formulas (wffs).

1. To prove that a "social welfare" is within our grasp
2. To create a highly versatile tool, "win-win-win Papakonstantinidis model" able to adapt or be adapted to many different functions or activities, by well-formed formulas (wffs), thus contributing in changing the 2-pole (black-white) perception, in a three pole [0,01,1] welfare cognition
3. To document the necessity and usefulness of the "win-win-win" based on incompatibilities of five classical theorems and 4 Theories, as each of them excludes others
4. To find a base-role for the third win (=the Community) in any bargain between 2
5. To deal with the incompatibilities of 5 basic theorems⁴ that concern the concept of "welfare economics" These theorems are: The impossibility theorem (1951 Kenneth Arrow: book: Social Choice and Individual Values , as well as the Amartya Sen "liberal paradox" (either Pareto optimality , , or liberty) the theorem of incompleteness (Kurt Gödel (1931) , , the Rawls Theorem on Justice, 1958("Justice as fairness, in his Philosophical Review,1958) the Nash Equilibrium in Nash "Non cooperative Game Theory 1951(annals of Mathematics,1951 Vol. 54, No. 2 (Sep., 1951), pp. 286-295) and the "Pareto optimal in a 3D space according to Furthermore , there is an incompatibility between "Justice Theory" (Rawls) and [or] "Prioritarianism" : According to Moreno-Ternero, Juan D. Roemer , John E. The Veil of Ignorance (the fundamental Principle of Justice Theory) violates Priority;
6. Pareto Optimality:

⁴ see more analysis in Papakonstantinidis LA (2016) Volume II titled "The "win-win-win papakonstantinidis model" VOLUME II: COLLECTION social choice, social welfare: theoretical background 2016

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Pareto efficiency or Pareto optimality, is a state of allocation of resources in which it is impossible to make any one individual better off without making at least one individual worse off.

$\max \text{..Utility..Function:} \dots \max U(x_1 \dots x_n)$

$\sum p_i x_i \leq M, \dots x_i \geq 0, \dots \forall x_i \in \{1, 2, \dots, n\}$

In particular,

1. The study aims to highlight the existence and importance of a tri-polar process approach of scientific and practice - everyday thinking For this purpose develops individual objectives which reaches through the "thought experiment":

- "The common goal of a thought experiment is to explore the potential consequences of the principle in question: "A thought experiment is a device with which one performs an intentional, structured process of intellectual deliberation in order to speculate, within a specifiable problem domain, about potential consequents (or antecedents) for a designated antecedent (or consequent)" (Bowers PM, Cokus SJ, Eisenberg D, Yeate 2004) p. 150) .The study goes on by Implicative lattice
- This work is well be out and logical methodology will provide a great backbone for the entire research paper, allowed to us build an extremely strong results section Having some –selective- influences from the Ancient Greek Philosophy (Socrates, Plato, Aristotle Epicurus), as well as philosophies of the Enlightenment and the "Age of Reason" (such as Locke, Hobbes, Hume Kant & alle) as well as from modern rationalist philosophy, this work combines an empiricist approach with a rationalism that emphasized conceptual clarity and deductive argument.

According to the "Impossibility Theorem (Kenneth Arrow (1951) ,"Social Choice" does not exists: It is impossible and more persons to agree each-other: "If we exclude the possibility of interpersonal comparisons of utility, then the only methods of passing from individual tastes to social preferences which will be satisfactory and which will be defined for a wide range of sets of individual orderings are either imposed or dictatorial". Now, our attempts are focused on finding a "new" "social welfare form...".. treating the community as a whole as an aggregate entity that participates in a social welfare game(Prof Creg Tovey, RG,2016)

Pareto efficiency or Pareto optimality, is a state of allocation of resources in which it is impossible to make any one individual better off without making at least one individual worse off.

Gödel's incompleteness theorems are two theorems of mathematical logic that demonstrate the inherent limitations of every formal axiomatic system containing basic arithmetic. These results, published by Kurt Gödel in 1931, are important

both in mathematical logic and in the philosophy of mathematics.

Gödel's two incompleteness theorems concern the limits of provability in formal axiomatic theories:. The first incompleteness theorem states that in any consistent formal system F within which a certain amount of arithmetic can be carried out, there are statements of the language of F which can neither be proved nor disproved in F. According to the second incompleteness theorem, such a formal system cannot prove that the system itself is consistent (assuming it is indeed consistent).

From this point of view, win-win-win theory may be seen as "agency theory", in the frame of "SET theory" (Cantor) (ZFC): The concept here is that the "set theory" deals with sets which informally are collections of objects. Any type of object can be collected into a set From this point of view, the win-win-win perception includes "sets of behaviors" that obey in common rules (axioms)

Steps toward "win-win-win argumentation:

- To examine, analyze and deal with alternative scenarios- seemingly unrelated to each other; from the fields of Bargaining Theory.

3. Research Methodology

The study uses three main methodological tools, thus depended on three different aims as bellow:

Table 1: Methodology followed and its tools

nr	Aims to be proved	tools	%
1	Social welfare exists	Math sequences Calculus	30
2	Utility function –profit maximization	Marginal economics	25
3	Bargaining Behavior	Profit maximization First derivative	25
4	Measuring welfare	% deviation from the equi-harmony point	20

Source: Papakonstantinidis, 2019

Conditions

- The bargaining problem is a "sharing problem", not a binomial-probability term
- From this point of view, "payoffs" are the incentives, for which 2 bargainers start negotiations The final [agreement or not agreement] are the outcome of bargain
- In this proposed method, we recognize that "When two negotiators pushed by expected payoffs, then each of them acts as a rational unit which claim for his/per profit maximization".

4. Analysis Bargaining Problem: The “Angels’ Moment“

Rules of Bargaining – Economic Efficiency-Welfare

1. Utility function- see diagrams
2. Rules of Bargaining

DUOPOLY-Cournot, 1848: The result of choice of the player (A) depends on the choice of the other(B) “player”, his own expectation about payoff, as well as his own expectations about the choice of the player B (best response game) These expectations are weighted by the event expectation probability – The same for the player B.

In duopoly, where prices what is asked is to find q1 and q2 which maximize total profit for both (A,B) : That’s the equilibrium point (Nash-Cournot equilibrium).

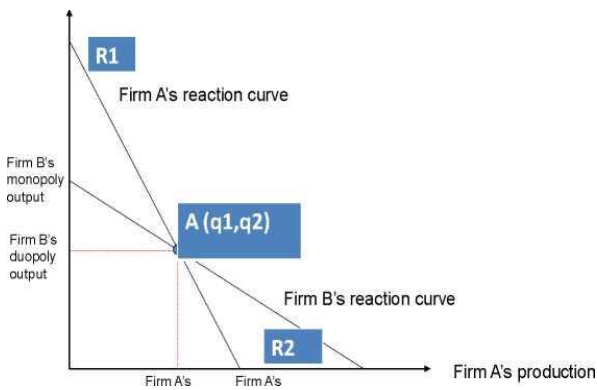


Figure 1: Cournot duopoly

If the quantities q1, q2 represent “mixed” strategies (decisions) a1, a2 and if b1,b2 the (MRS- marginal rate of substitution or in geometry the slopes of the R1, R2) , then the max profit for A,B is given by the

It is a point where the two firm’s best-response functions intersect (see the scheme below):

DUOPOLY: Reactions’ (R1 and R2) Intersection point (q1, q2) Cournot equilibrium:

It is found that the pair (q1, q2) of actions with the property that player 1’s action is a best response to player 2’s action, and player 2’s action is a best response to player 1’s action:

a. (INV) Invariance to coordinate-wise affine transformation

A...BARGAINING...SOLUTION...s ∈ (R^n)^B ...is...INVARIANT ...to...coordinate-wise...affine

for..all,,the..(U ,u) ,..(U' ,..u') ∈ B, such..that

1,..there..exist,,a ∈ R^n_+ ..and..B ∈ R^n ...such..that

1....diag(a)u + b = u'

2...and..u ∈ Uifdiag(a)u + b ∈ U

it..holds

diag(a)s(U ,u) + b = s(U' ,u')

b. (SYM) Symmetry preservation

Symmetric bargaining in the absence of contraction

Two individuals X and Y (both from the same homogenous population) get to share a pie

of size z. Their respective shares are x and y (both non-negative), so that x + y = z: We

normalize z to be equal to unity so that x and y may be interpreted as the percentages

(proportions/fractions) of the pie that X and Y (respectively) get, from which they derive

utilities v(x) and v(y). Hence X and Y are symmetric by our definition

Thus, two agents are symmetric if each has the same bargaining power against the other. They are asymmetric when one has a higher/lower bargaining power against the other. Thus the functional form v, represents the utility of a typical agent from our homogenous population.

Nash bargaining solution $S ∈ (R^n)^B$ preserves symmetry if

for all (U, u) such that

1. for all i = j, u_i = U_j and

2. for all (u_i, ..., u_n) ∈ U and all bi-ejective $p ∈ \{1, ..., n\}^{1, ..., n}$,

$(u_p(1) \dots u_p(n)) ∈ U$

it holds, for all i = j,

$S_i(U, u) = S_j(U, u)$

c. (EFF) Efficiency

a bargaining solution $S ∈ (R^n)^B$ is efficient if

for all (U, u) ∈ B and all u' ∈ U such that

1 u < u', and

2 there exists u' ∈ U such that u < u', it holds

$S(U, u) ≠ u$

d. (IND) Independence of irrelevant alternatives

a bargaining solution $S \in (R^n)^B$ is independent of irrelevant alternatives if

for all $(U, u), (U', u') \in B$ such that

- 1 $u = u'$,
- 2 $U \subseteq U'$, and
- 3 $s(U', u') \in U$,

it holds

$$s(U, u) = s(U', u')$$

e. (MON) Monotonicity

a bargaining solution $s \in (R^n)^B$ is monotone if

for all $(U, u), (U', u') \in B$ such that :

- 1 $u = u'$,
- 888888888888888888888888

If

$$s \in (R^n)^B \text{ is}$$

1. INVARIANT ...to.coordinate-wise.affine.,transformations

2...synnetry- peserving

3.efficient

4.monotone

$$\text{then...for..all}(U, u^*) = \arg \text{MAX}_{u^* \in U} \prod_{i=1}^n (u_i - u^*)$$

$$u - u^* = \lambda(u - \hat{u}^*) \text{..for..some,,} \lambda > 0$$

Nash Equilibrium

The suggested, new equilibrium win-win-win in a 3-D space
 The personality theory in bargaining emphasizes that the type of personalities determine the bargaining process and its outcome. A popular behavioral theory deals with a distinction between hard-liners and soft-liners. Various research papers refer to hard-liners as warriors, while soft-liners are shopkeepers. It varies from region to region. Bargaining may take place more in rural and semi-urban areas than in a metro city.

Economic Efficiency and Welfare

Measuring economic efficiency is often subjective, relying on assumptions about the social good, or welfare, created and how well that serves consumers. At peak economic efficiency, the welfare of one cannot be improved without subsequently

lowering the welfare of another. In this regard, welfare relates to the standard of living and relative comfort experienced by members within the economy.

Even if economic equilibrium is reached, the standard of living of all individuals within the economy may not be equal. Pareto's efficiency does not include issues of fairness or equality amongst those within a particular economy. Instead, the focus is purely on reaching a point of optimal operation in regards to the use of limited or scarce resources.

A "win-win-win equilibrium" is stronger than measurement "economic equilibrium": "Community" (the 3rd win, in bargaining between 2), as a discrete entity, includes quality elements of any bargain (as equality, justice, democracy, standard of living,...) From this point of view, "Community" is a rather imagination, a point where we want to go, as 'GLOBAL SOCIETY'

Nash Equilibrium

During the bargain, "mutual respect" between the two bargainers to each other's best choices' is necessary. It is recognized that the more DETERMINED to break down the negotiation (= less utility), the more satisfied (=better shares) - the more risk, the more profit.

$$(S, f)$$

$$S = S_1 \times S_2 \dots \times S_n$$

$$f = (f_1(x), f_2(x), \dots, f_n(x))$$

for $x \in S$, except for player i . When each player $i \in \{1, \dots, n\}$.

$x = (x_1, x_2, \dots, x_n)$ then player i obtains payoff

$f_i(x) \in S$ is Nash equilibrium (NE) if no unilateral deviation in strategy by any single player is profitable for that player, that is

$$\forall_i x_i \in S_i x_i \neq x_i^* : f_i(x_i^*, \dots, x_{-1}^*) \geq f_i(x_i, \dots, x_{-1}^*)$$

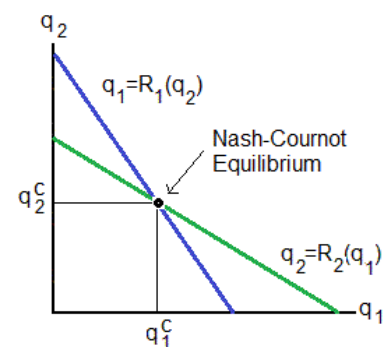


Figure 2: Ideal Situation- The "Angels' Point"

'Pareto Efficiency'

Pareto efficiency, also known as "Pareto optimality," is an economic state where resources are allocated in the most efficient manner, and it is obtained when a distribution strategy exists where one party's situation cannot be improved without making another party's situation worse. Pareto efficiency does not imply equality or fairness.

PARETO...EFFICIECY

MAX...Utility...Function: ...MAX..U(x₁,...x₂,...x_n)

$$\sum p_i x_i \leq M, \dots \forall x_i \geq 0, \dots \forall x_i \in \{1, \dots, n\}$$

p = price, ...x_i = quantities.... $\sum p x_i = \text{sum.of..all,}, p x_i$

M = FRONTIER...MAX..sources.for..allocation

$$U_i = u_i \times p_i$$

$$U_A = u_A \times p_A$$

$$U_B = u_B \times p_B$$

$$U_C = u_C \times p_C$$

U = pleasant...experience...
according to...a...strictly...personal...positive...list

U=individual...utils... (not...measuring)

p:
probabilities these...pleasant...experienced's...utils...to...occure..in.the...A.B.C...individuals

The bargaining problem is a **“problem of sharing”**⁵
From this point of view, “payoffs” are the incentives, for which 2 bargainers start negotiations
The final [agreement or not agreement] are the outcome

In this proposed method, we recognize that
“When two negotiators pushed by expected payoffs

Notes:

A,B,C...do,,not...cooperate...forward

A,B,C...must...collaborate.in.and.during...the.bargain.(inst ant..reflection...winning...strategies)

“C” expresses not only...the rest...(no..bargain...participants),, but..also..the..total..community...the..word cultural heritage,world...cultivation...the..”human being”...”Homo Sapiens”

From..this...point.of...vine,...Community...participation...i n..any..bargain..between..TWO(2)..is...necessary

Also,..Community – the...”c”..factor..MUST...express..the..”Community..Fear”..fr om.the...bargain,..between...A,B

For.this...”Community participation”..is...captured.as...(100= x=y)*, where.n=the..fear..factor...(nonlinear), while...

The...A,B..utility...functions...must.be...linear

Finally,

The win-win-win model implies that:

1. Each of bargainers takes his/her best decision (\geq)
2. There exists a point (the angels point) in which any of them takes the best satisfaction, from their own strategy (decision) [“we”, instead of “I”]
3. There exist a point (the “angels” point) if no unilateral deviation in strategy by any single player is profitable for that player, that is

$$\phi \leq h_{lp}^* \leq e$$

“The win-win-win” situation:

$$e = \sum_{n \rightarrow \infty} \frac{1}{n!} = 1 + \frac{1}{1 \times 1} + \frac{1}{1 \times 2} + \frac{1}{1 \times 2 \times 3} + \dots = 2.718281828459\dots$$

Why the number e(=2.71828) was chosen as the natural base for logarithm functions ? Mainly I am interested in knowing why is it called "natural " The number "2" could instead have been chosen as the most natural base.

From this point of view, the proposed model yields excellent predictions of offers in the ultimatum game, and requests in the sequential common pool resource dilemma game. Strikingly, the predicted demand in the ultimatum game is equal to the famous Golden Ratio (approx. 0.62 of the entire pie), in favor of a new notion of ‘harmony’, defined as the intersection of strategies, at which all players are equally satisfied. He showed that the proposed model yields excellent predictions of offers in the ultimatum game, and requests in the sequential common pool resource dilemma game. Strikingly, the predicted demand in the ultimatum game is equal to the famous Golden Ratio (approx. 0.62 of the entire pie) The same prediction was recently derived independently by Schuster (Schuster 2017. Sci. Rep. 7, 5642). Now, we extend the solution to bargaining games with alternating offers. We show that the derived

⁵ In this term, scientists (rontos and alle) have not right, as they try to solve it, by probabilities bargaining problem is a mainly a sharing problem

From all these notions, the two approaches- **Souleiman-Papakonstantinidis**⁶ converge

Solution predicts the opening demands reported in several experiments, on games with equal and unequal discount factors and game horizons. Our solution also predicts several unexplained findings, including the puzzling ‘disadvantageous counter-offers’, and the insensitivity of opening demands to variations in the players’ discount factors, and game horizon. Strikingly, we find that the predicted opening demand in the alternating offers game is also equal to the Golden Ratio⁷.

STATEMENT (Papakonstantinidis, 2018)

The **sensitization process**-which is the core of this Work -may be formulated by the world three (3) constants

$$\phi, e, \pi$$

of three (3) sequences, which, -we suppose- converge in the

limit h_{lp}^* such that:

$$\phi = 1,618.. \leq h_{lp}^* = 1,888.. \leq e = 2,7182818.$$

Let’s See How:

The “3-win Lemma⁸

Finally,

Each of sequences (sensitization process) is clogged up and down, i.e has an upper limit=2, on which all of them converge and a down limit 1,56....So there is the possibility, each of them



to converge on 1,618...=phi, from FIDIAS

We, now, suppose that, MEASURING “WELFARE”

“The win-win-win” ideal situation:

we have to show that:

$$\ln 2 \leq \phi \leq h_{lp}^* \leq e$$

Indeed,

$$\ln 2 \approx \frac{1}{n} + \frac{1}{n+1} + \dots + \frac{1}{2n-1} < \phi = \lim x_n = \frac{1}{1+x_{n-1}} \leq \frac{1}{n} + \frac{1}{n+1} + \dots \leq \left(1 + \frac{1}{n}\right)^n \approx e$$

It has been proved (Papakonstantinidis, 2018)⁹ that

$$\ln 2 \leq \lim_{n \rightarrow \infty} u_n \leq \lim_{n \rightarrow \infty} v_n \leq \lim_{n \rightarrow \infty} z_n \leq e$$

In their “win-win-win” ideal situation (perfect sensitization, or the angels’ moment),

$$\phi \leq \lim_{n \rightarrow \infty} u_n = \lim_{n \rightarrow \infty} v_n = \lim_{n \rightarrow \infty} z_n < e$$

We will now show that the sequence¹⁰

$$u_n = \frac{1}{n+1} + \frac{1}{n+2} + \dots + \frac{1}{2n} \dots n = 1, \dots, \dots$$

converges and we have:

$$\lim_{n \rightarrow \infty} \left(\frac{1}{n+1} + \frac{1}{n+2} + \dots + \frac{1}{2n} \right) = \log 2 = \ln 2$$

Proof (geometric proof)

We have that the sum of the areas of the circumscribed and inscribed parallelograms of width 1 will be (greater than smaller than) than the area:

$$\int_n^{2n} \frac{dx}{x} = \ln..2n - \ln..n = \ln..2$$

...that is,

$$\ln 2 \leq \frac{1}{n} + \frac{1}{n+1} + \frac{1}{n+2} + \dots + \frac{1}{2n-1} \leq \frac{1}{n+1} + \frac{1}{n+2} + \dots + \frac{1}{2n} \leq e$$

Concluding,

The win-win-win papakonstantinidis model is the limit-up of a continuous sensitization procedure, at any (A-B) bargainers symbolized by the three sequences’, i.e

⁶ The 888 triangular approach

⁷ Oxford English Dictionary, 2η εκδ.: natural logarithm/ Encyclopedic Dictionary of Mathematics 142.D/ Jerrold E. Marsden, Alan Weinstein (1985). Calculus. Springer::

Ο αριθμός e είναι σημαντική μαθηματική σταθερά, η οποία αποτελεί τη βάση του φυσικού λογαρίθμου. Είναι περίπου ίση με 2,71828 και είναι το όριο της ακολουθίας $(1 + 1/n)^n$ όσο το n πλησιάζει το άπειρο, μια έκφραση που προκύπτει από την μελέτη των σύνθετων τόκων. Μπορεί επίσης να υπολογιστεί ως το άθροισμα της άπειρης σειράς Η σταθερά μπορεί να οριστεί με πολλούς τρόπους. Για παράδειγμα, ο e μπορεί να οριστεί ως ο μοναδικός θετικός αριθμός a, τέτοιος ώστε το γράφημα της συνάρτησης $y = ax$ έχει

κλίση ίση με 1 όταν $x = 0$. Η συνάρτηση $f(x) = ex$ ονομάζεται εκθετική και η αντίστροφη της είναι ο φυσικός λογάριθμος ή λογάριθμος με βάση το e. Ο φυσικός λογάριθμος ενός θετικού αριθμού k μπορεί επίσης να οριστεί άμεσα ως η περιοχή κάτω από την καμπύλη $y = 1/x$ μεταξύ $x = 1$ και $x = k$, όπου, το e είναι ο αριθμός του οποίου ο φυσικός λογάριθμος είναι 1

⁸ starting from: Lambros Iossif-Leonidas A. Papakonstantinidis (1990)

⁹ "Observation on a Limit" Mathematical Review, issue 37,

⁹ Papakonstantinidis LA “CSR : An application of the “win-win-win papakonstantinidis model” (BOOK) LAMBERT Publishing (2018)

¹⁰ The same for the other two, v_n and z_n

$u_n \dots \text{for...the..BARGAINER} \dots A$

$v_n \dots \text{for...the..BARGAINER} \dots B$

$z_n \dots \text{for...the...COMMUNITY, AS...THE...THIRD...BARGAINER}$

Indeed,

You can imagine the successive steps towards sensitization as a series of sequence terms that converges to a limit

The boundaries of these sequences, since they represent "sensitization levels", also form a new **W_n sequence**

We prove that this new sequence consists of their limits as "sensitization sequences" converges at some point to the ideal limit -up (the perfect society, or the society of angels) then all three limits of the u_n, v_n, z_n sequences a, b and the community, C, respectively forming a new-unique sequence, which converges in a **new L limit, which can be measured, as the**

$$\text{deviation from } \ln 2 = 1 + \frac{1}{n+1} + \frac{1}{n+2} + \dots + \frac{1}{2n}$$

Tending toward an ideal (angels) situation

The win-win-win papakonstantinidis model is the limit-up of a continuous sensitization procedure, at any (A-B) bargainers symbolized by the three sequences', i.e

$$\lim_{n \rightarrow \infty} u_n \leq \lim_{n \rightarrow \infty} v_n \leq \lim_{n \leftarrow \infty} z_n$$

In their limit, we have:

$$\lim_{n \rightarrow \infty} u_n = \lim_{n \rightarrow \infty} v_n = \lim_{n \rightarrow \infty} z_n$$

Indeed,

You can imagine the successive steps towards sensitization as a series of sequence terms that converges to a limit.

The boundaries of these sequences, since they represent "sensitization levels", also form a new "Win" sequence.

We prove that this new sequence consists of their limits as "sensitization sequences" converges at some point to the ideal limit -up (the perfect society, or the society of angels) then all three limits of the u_n, v_n, z_n sequences a, b and the community, C, respectively forming a new-unique sequence, which converges in a new L limit.

5. Conclusion

The "win-win-win papakonstantinidis model" is a "tool of consent" useful in socio-economic human (and not only) relations Using this tool, a decent answer can be given to Arrow's impossibility theorem. Also it is a "tool" for conflict resolution Also it may be used in approaching the "Principal-Agent Problem" (PAP) In particularly, argumentation of the work is focused on "transferring the "voting perception (Arrow, 1951) from a single individual choice, in the «bargaining multiple decision making, thus taking into consideration the

"Community Profit" (The 3rd part so a "peer-pressure perception" Bargainers A-B and the Community as a whole (the "C" Factor), or as "a Moral Aggregation"

Special regard is given to regional and local development field both as a regional and social sciences. It proves that building social capital at local level mainly depends on social trust links among local people: Social cohesion based on social capital may be measured by the diversification Rate (R *) from strict globalization rules: From this point of view, local people's intervention should be useful, so as to diversify these "rules" at local level adjusting them to local identity, including communication code, customs, ethics, culture.

The Win-win-win methodology [Papakonstantinidis Model] should facilitate local people to "readjust" bargaining globalization rules locally, through a sensitization process: Community is defined as a discrete spatial / cultural entity, as their people's sensitization process' is going to its limit.

I tried to identify the "win-win-win" as a key tool for the approach to social welfare by clicking on the incompatibility of five basic theorems that define it - each one of its own side-either positive (justice theorem) or negative (the impossibility theorem).

The suggested "win-win-win papakonstantinidis model" is built up on these incompatibilities, in particular as regards the pairs "Pareto efficiency – Impossibility Theorem" "paradox liberty (Amartya Sen) - Pareto Efficiency" , "Theorem of Justice – Pareto Efficiency" and (the most important) "the Theorem of incompleteness-the Impossibility Theorem".

The "win-win-win papakonstantinidis model" (2002, August, SW) may, thus, transform individual winning –instant reflection –strategies (the win-win Nash Theory) in a NEW – three poles-equilibrium point, including the COMMUNITY (Environmental Protection, Value Systems, Ethic etc), which is the "absolute cooperation" limit point in the bargain between TWO.

Papakonstantinidis conjectures:

1. "at any bargain between two, each one from the 2 bargainers represents the whole of the community and (at the same time) him/herself. From this point of view, Community may be concerned as an aggregate entity that participates in a social welfare game. So, "what is good for the Community (the third "win") and what is no, incorporated in each one from the bargainers' expectations (in the frame of the "agency theory" or "the principal-agent -problem"

AND

1. People have by nature, a strong trend to cooperate each-other. From this point of view, "a win-win-win situation

may be possible if and only if the human mind (as expressed in terms of interaction), is built to accept this situation (the universal cooperation) bargainers think double, as separate rational units

2. The problem of interaction in a bargain is transferred from the negotiators' intentions into share's distribution in a possible solution by agreement

a. People want to cooperate, but in the depth of their mind seek such an agreement that will give them shares such that to maximize the satisfaction of personal needs

b. This point is very important for our work : Social welfare is the product of "ordinal" (and not cardinal) individual/personal utilities (to maximize the satisfaction of personal needs)

c. The product of individual ordinal utilities becomes maximum when the product of marginal utilities tends, or is equal to zero, as there is nothing else to be added such as to increase personal or individual satisfaction beyond the existing level.

Especially, in the local management context, it must be understood that the existence of a "distinguishable entity", depends upon the degree of understanding and sensitization of knowing better the other polar (Spais, Papakonstantinidis and Papakonstantinidis, 2009). For the needs of the study, I adjust the conceptualization, in order to deal with local management and development decisions The win-win-win perception is based on the assumptions of information accessibility and diffusion that characterize the modern globalized societies as well as the complexity in the decision-making values that the "third win" (the "C" factor) could unlock a series of obstacles (Spais, Papakonstantinidis and Papakonstantinidis, 2009). Another idea, is that the individual three-by-two, (although doubts) must take into consideration at each time that there is the third distinguishable part (Spais, 2012) in the bargain, based on behaviorist analysis through the "neural networks".

Recent literature on behavioral analysis, provides us with the relation between knowledge and behavior So, an overview is attempt (Papakonstantinidis, 2005), as to find the relation between "knowledge transfer and knowledge creation", in the frame of the "Modern Innovation Theory- M.I.T" (Fischer M.M, 2006 Nonaka and others) Behavior thus may resulted from this knowledge types' synthesis, as the table below.

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