

# Integrated Intelligentsia of Social Systems

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**Abstract:** This paper integrates the roles of inspirational, acquired, and genetic intelligentsia that dominant the actions in everyday life. This unique blend of intelligence permits entities to solve, resolve, refine, and to iterate the solutions to an economically viable optimal limit. The law of diminishing returns is foreseen in the solution by the proposed social machines rather than the human perception. The paper also presents the implementation in a computer environment and extends it further in a network and communication environment, including the Internet. The clue lies in organizing and managing such rapid flow of immense flow in a mindset that is very slow in comparison. As reaffirmed in the conclusion, the approach outlined in the paper should be valuable for much of humankind and for social organizations.

**Keywords:** Intelligence in Nature, Evolutionary and Natural Intelligence, Genetic Intelligence, Artificial Intelligence, Network Intelligence

## I. INTRODUCTION

Like knowledge, intelligence exists everywhere. Higher level of knowledge is generally indicative of higher capacity to comprehend, or intelligence, or the skill for immediate problem solving. Processing and contemplation of observed information lead to knowledge and then on to longer-term wisdom ( $W$ ). However, the caliber of the particular individual plays a role in the final steps of infusing intelligence with wisdom becomes variable. In a statistical evaluation, the mean and variance of the individual caliber and education in any society can be estimated thus the Artificially Intelligent (AI based) machines provide a guide to individuals referring to such machines based on preprogrammed logic and/or expert systems. For this reason, the refined, educated, and contemplative sophisticated individual can excel well beyond the prediction and solutions of most AI machines. In unison the research addresses the question whether human beings and social machines in conjunction can far excel either one. Well designed and introduced digital systems and networks are timely now and desirable to compliment the three genres of intelligence introduced in Figure 1 depicted in Section 3.1.

### 1.1 Knowledge and Wisdom before Intelligence

Intelligence thus becomes practical and contextual wisdom and the deployment of selected, appropriate and timely wisdom. Elements of knowledge ( $\delta k$ ) are generated when a noun object ( $n$  or  $N$ ) accomplishes an action ( $v$  or  $V$ ) in an acceptable style or convolution ( $*$ ), then an increment of knowledge  $\delta k$  is the result. Conceptually this truism is represented as:  $\{(\delta k)\} = n*v$  or  $N*V$ . When such

numerous ( $\delta k$ ) are accumulated over a time interval of ' $t$ ' seconds then a body of knowledge is generated as:  $k$  or  $bok = \sum \delta k$ 's or  $\int (\delta k$ 's).  $dk$ , etc. From a Macroscopic perspective, the presentation of large blocks of knowledge  $K$  can be written as:

$$K = \sum N \sum * \sum V (\delta k) \text{ or as } \int [n] * \int v \{ (\delta k = f(n, *, v)) \} dv \cdot d* \cdot dn]$$

## II PATTERNS OF INTELLIGENCE

### 2.1 Rare Positive Peaks of Intelligence for the Genius

Sometimes the interactions of an individual with the environment can lead to an immense change in the intelligence. Both the extent and nature of intelligence can get affected. In teacher-student relations, the teacher can (and in most cases) enhances the understanding and capacity of the student, thus building the level of acquired intelligence. This mentor-researcher also displays such learning to train and alter the intelligence to seek and solve scientific and social problems. In shrines, synagogue, mosques and churches it is not uncommon to remake the personality (including their capacity to think) of the learners.

In rare cases, the acquired intelligence that is appended to the genetic intelligence can experience a phenomenal upward growth; or conversely a downward increment of change is also feasible. In addition, repeated solitary excursions of the mind during self isolation, yoga, or a solitary prison, may bring unusual changes in the nature of intelligence.

When the choice between good and bad is made, the genetic intelligence may play a subconscious role. Sometime philosophers (by their genetic code) have a great heritage. When genes, parental training, and learning are tuned in the same direction as the vector of intelligence and in harmony, great minds evolve. These factors do not need to be simultaneously active. The time lag or incoherence can result as a matter of chance. But the important constituents need to be present.

### 2.2 Uncommon Negative Deep cuts in Intelligence for the Mafia

As many as there are peaks of intelligence in the vector (magnitude and direction) of intelligence, there can be deep cuts in the vector intelligence. For example, Picasso's genius in painting can be contrasted with Al Capone's Mafia tendencies for crimes; or Einstein's Relativity lies diametrically opposite the Hitler Nazism. When the change is incoherent, disorderly and directed toward self-interest the individual can (and sometimes) becomes a killer member of

the Mafia or a criminal. Greater is the chance towards the negative change since the upward change demand concerted effort. Fortunately, the negative intelligence is generally shallow and trap the thugs readily when the judicial system in the society is active. Schools of scoundrel do not generally become fully fledged universities, except in military and diplomacy. When the intelligence turns negative the criminals can remain at large for long time with an ongoing tug of intelligent minds, individuals, entities and even nations.

The integration of the many direction of negative intelligentsia is perhaps possible but appears unworthy of any value and rewards, except for the crime investigators. However, the Internet being primed with negative intelligent agents can turn more deadly than disjointed sub-entities. The spread of a virus of negative intelligent agents can be trapped by an antivirus of positive medicine and the canyons can be filled by self learning machines provided the machine can work faster than the escape ploys of thugs. Social machines of the future may provide enough road blocks for the thugs at large.

### 2.3 Pro-life and Anti-life Intelligentsia

The innate human tendencies like nature and evolution have worked towards healing and betterment of life in all species. Such tendencies and actions ( $V$ 's) help and heal rather than doom and deter life. With an intelligent Internet (that *is* being currently used) by the judicious and conscientious intellectuals, the Internet intelligence of the future generations should be cast in positive intelligence as much as an intelligent Internet (that *can be* abused) by criminals, the evil of the past generations should be recast as negative intelligence. Such a change makes the collective **positive** (human and machine) intelligences as life-giving; and conversely makes the **negative** (human and machine) intelligences as life-taking or threatening intelligences.

Pro-life intelligence has been the saga of the past repeated over many eons as "good". In this context of this paper pro-life should be interpreted broadly as a collectivity (ies) of happiness, joy, virtue, coherence, beauty, charity, sharing, loving with patience, forgiveness, etc. These terms were ill defined in the past but the concept and intent has always existed. The unification of these attributes is the integrated pro-life tendencies, choices, and actions ( $V$ 's<sup>+</sup> and  $v$ 's<sup>+</sup>).

Anti-life intelligence has coexisted simultaneously as "evil" in the past. In this context, anti-life should be interpreted broadly as a collectivity (ies) of decease, misery, deceit, falsehood, unattractiveness, miserliness, hoarding, hateful with haste and killing(s). The unification of these attributes is the integrated anti-life tendencies and actions ( $V$ 's<sup>-</sup> and  $v$ 's<sup>-</sup>).

It is equally plausible that the vector of intelligence can rotate to the extent that the directions can reverse. History can be erased by burning the books. Sometimes and some entities have tried the reversed concepts (e.g., China during Mao regime or Germany under Hitler). Hope and judgment have prevailed and the vectors are reoriented towards the trend of evolution of species to their peaks rather than sink in the canyons of history. The process of reversal and return to the older (depth and orientation) intelligence vector does leave a mark in the life cycle of that entity (a human, a group, a species, a race, a culture, a society, a nation, etc).

### III. GOOD AND EVIL ARE PRO-LIFE AND ANTI-LIFE ACTIONS IN KNOWLEDGE AGE

During the pre-industrial and the pre-Internet era, the concepts of good and evil was implanted in the human psyche as abstract and could be imagined as desirable or undesirable. The populous started to challenge the concept of goodness in good and the ugliness in evil. The faith of the prior generations was gradually fading and reason started to dominate the empty words of the older generation.

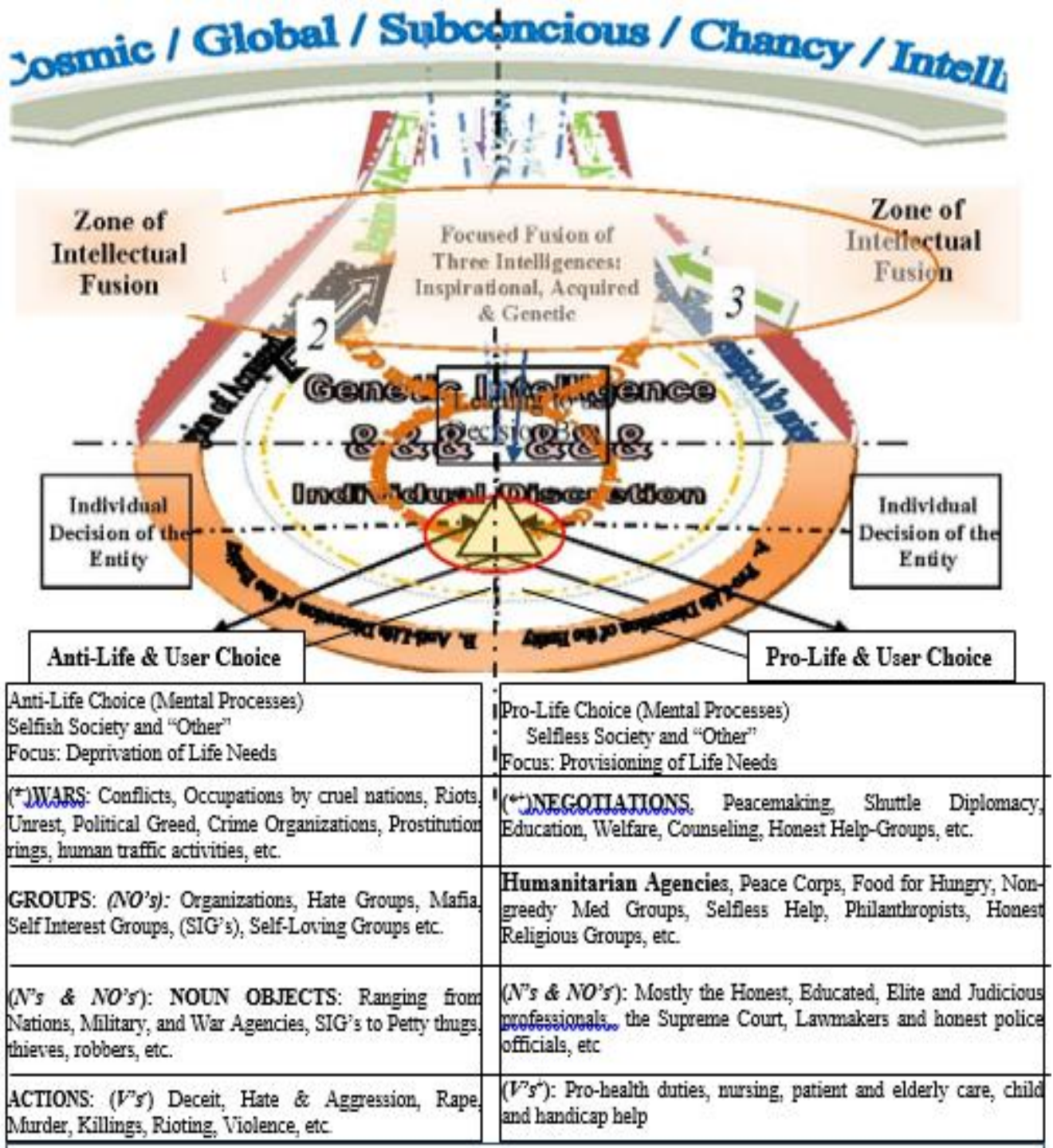
The Internet age generation has reaffirmed the challenges of the younger generations of the industrial age. With Internet age and knowledge generation in full command during the 21<sup>st</sup> century, the earlier questions (about the abstractions of good and evil) have remained intact! In this section, we present a possible explanation that answers the measure of goodness in good and the ugliness of evil by linking the two concepts as pro-life and anti-life actions ( $V$ 's) of one entity

for or against another entity.

Rather than leaving the concepts floating in the unseen and un-measurable, the quality and the number of positive actions ( $V$ 's<sup>+</sup>) is the measure of goodness in good and conversely the extent and the number of negative actions ( $V$ 's<sup>-</sup>) is the measure of ugliness in evil. This proposed quantification does not counter the prior concept of good or evil! Instead it makes good or evil of one life form for or against another. If society is one of the entities, the  $V$ 's of social wellness are a sign of evolved societies by those who seek and accomplish  $V$ 's for all the members of the elite society, etc.

#### 3.1 The Initiation of Action ( $V$ )

The processes in the generation of  $V$ 's, (i.e., the action to be taken next after due diligence) is a result of the focused decision-making activity by merging subconscious intelligence (feelings, inclinations, "gutt-intuition", Expert Systems etc.), of the entity with learned intelligence (historical and current technological experience, tradition, and self-righteousness, etc.) and the majority genetic code that controls the thought processes of the entity.



Note: The processes in the generation of *V's*, (i.e., the action to be taken next after due diligence) is a result of the focused decision-making activity by merging subconscious intelligence (inspirations, feelings, inclinations, intuition, etc.), of the entity with learned intelligence (historical and current technological experience, tradition, and self-righteousness, etc.) and the majority genetic code that controls the thought processes of the entity. In some cases, inspirations can become divine as such as intuitions can become cruel.

Figure 1. Role of human discretion in the choice of Verbs (*V's*; actions, deeds, and intentional doings of entities or humans (*N's*)) in the choices of promoting life (pro-life, Right side) such as providing for needs to live on, or in the choice of depriving life (anti-life; Left side)



### 3.2 Anti-Life Choice (Mental Processes – Negative $Vs^-$ )

The focus of these processes is plain and simple: the abuse of the Intellect. Cruelty by depriving the needs of life for themselves, minds, humans and societies is the result. Nature has two venues for blocking such cruel instincts by limiting the unbalances of excesses of any sort, except by the abuse of discretion of humans (see Figure 1). When such abuses become far too excessive, nature restores the balance by being cruel itself (e.g., global warming, restoring the carbon cycle, weather changes, viruses, etc.). The negative mental activities are typically caused by ignoring the fact that Nature has caused the human evolution to its present level of the intellect in the Internet age. Wars, unjustified occupation of lands, riots, unrest, , etc. result. And most frequently human instinctual Greed (appears) to the root cause. Greed ignited by fear knows no bounds except by the death of the entity. From Nations to petty little thieves all die in due course in their own life-cycle.

Sometimes human groups cause the infliction. Hate groups, Mafia, Self Interest Groups, (SIG's), Self-Loving Groups, add fuel to fire making the end sooner rather than later. Different entities, or ( $N's^-$ ) can host numerous verities of anti-life sentiments. Sometimes Nations, military, war agencies, SIG's, petty thugs, thieves, robbers, and rapists, provide their-entities as the bacterial, virus and cancer beds of anti-life decisions. The actions ( $V's^-$ ) Deceit, Hate, Aggression, Rape, Murder, Killings, Rioting, Violence, are equally infectious causing the ignorant and unwise to drift in an evil net.

### 3.3 Pro-Life Choice (Mental Processes – Positive $Vs^+$ )

The focus of these processes is plain and simple: the worthy use of human Intellect. Social welfare and provisioning for the needs of themselves, minds, humans, and society is the results. When moderation, justice, and balance are used in conjunction of the many vectors of intellect a semi-infinite reserve of energy, reserves, good sense, and opportunities arise for the time yet to be, fears, insecurities, and injustices start to give way to wisdom and trust. Perhaps, these later forces of long-term wisdom and trust of humans in Nature leads to a Nature friendly human, elite, society and Nation. The members of this group are mostly the honest, educated, elite and judicious professionals, the Supreme Court, lawmakers and honest police officials, etc. The forces in society and nature have caused the evolution of the civil-minded nature of the knowledge workers ( $Ns^+$ ) of the Internet age.

The actions ( $V's^+, \dots, Vs_p^+ \rightarrow Vs_m^+ \rightarrow Vs_s^+ \dots$  and back.) are also infectious and drift between the entities of equal ethics thus reinforcing one another; the evolution continues. Typical actions  $V's^+$  are pro-health duties, nursing, patient and elderly care, child, and handicap help, etc. The role of human discretion in the choice of Verbs ( $V's$ ; actions, deeds, and intentional doings of entities and humans) in the choices of promoting life (pro-life) such as providing for needs to live on, or in the choice of depriving life (anti-life) such as crimes

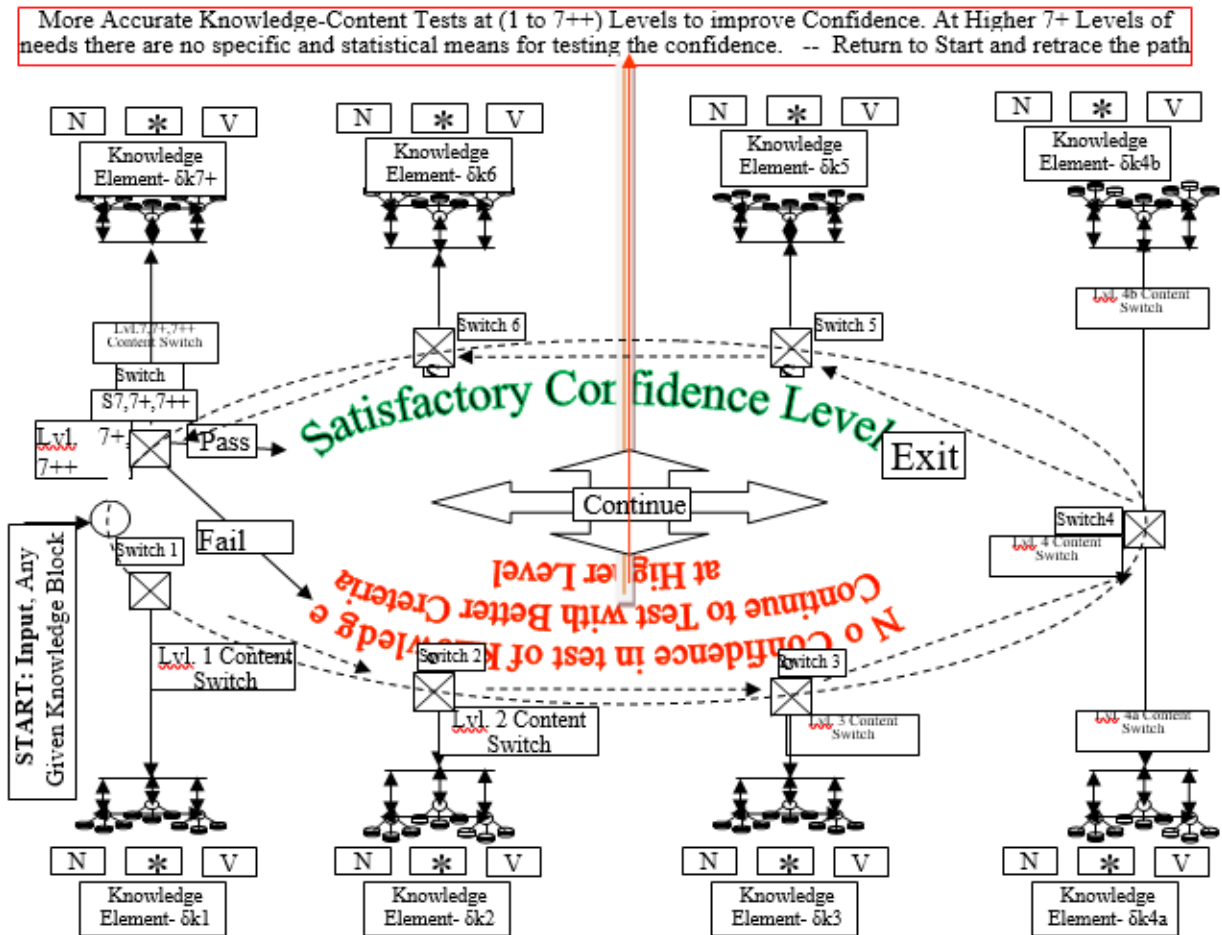
against humanity is depicted in Figure 1. The term life has to be interpreted all forms of life and human life resides atop the lives of other creatures. In a sense, a hierarchy of life becomes essential without selfishness<sup>1</sup> towards one's own self. When it comes to a choice of one's own life or the life of other, judgment play a great part and the frailness of human mind starts play a part. Ethics and family relations may also play a decisive role.

## IV. COMPUTER, COMMUNICATION SYSTEMS: NETWORK ASPECTS

The knowledge worker and IT professionals in the Internet depend heavily on the use of machines and networks; in fact computers, communication systems and all networks (LANs, MANs, and WANs) are as essential as paper and pencils a century back. The reality and rapidity of social, business, and financial transactions demand the efficient deployment of the embedded technologies in the society. In most cases the application programs that interface the users and the machines and networks reduce the time by an order of magnitude for the results and actions ( $V's$ ) to be accomplished. Humans generally drive actions or the ' $V's$ ' (via the deployment of application programs (Apps) on machines and networks) or by themselves directly controlling the hardware.

In the precise control of businesses and finances, the degree of confidence of execution of actions needs to high and most of the important actions need verification and confirmation. For this reason, computers and networks verify that every action  $V$  is accurately executed. Unfortunately, it is the human element that prone to grater error, indecisions, uncertainties, and change-of-mind). Undefined commands such as "gratify", "instruct", "find", "search", etc. are not digital commands to human beings. Being non-robotic, humans use their feelings and inclination in the process of executing a  $V$  or  $v$  command. The level of confidence creeps in the picture and gratification of needs the drive humans to action can vary dramatically especially at the higher levels of needs. In fact it is appropriate that at the 7, 7+ and 7++ levels needs are never gratified and the saints and sages a posture of finding a satisfactory solution. When this mode of operation prevails, the search and mind machines [1] are not likely to yield concrete (or an entire) solutions with a certain predefined limit in the *confidence* level. But the solutions offered "appear" to be is satisfactory for the solution (and gratification of the need) of the problem.

<sup>1</sup> This ideological behavior is rare except in the rare circumstances when a parent may sacrifice own life to save the life of a child.



The behavior of the machines is indicated in Figure 2. Figure 2 also depicts the testing of any given block of knowledge for the content and to classify (one or more of the 1 through 7, 7+ and/or 7++)

Figure 2. Representation of software system to test any given block of knowledge for the content and to classify (one or more of the 1 through 7, 7+ and/or 7++) the level(s) of need of the entity that knowledge is aimed toward gratifying. The knowledge element is defined as

and/or 7++) the level(s) of need of the entity that knowledge is aimed toward gratifying. Integrated knowledge and wisdom (*K* and *W*, see Section 1.1) drive social entities to act (*V*). A series of these Actions (*V*'s) eventually makes or breaks social entities, organizations and even nations.

Figure 2 further depicts a possible architecture of a two level machine that will offer a solution with a finite degree of confidence. In human life these processes are natural and perhaps genetic. However, social machines need to be programmed what is natural for humans. The entire effect is likely to be better than what a human being in a conscious mood can do or what a machine in its execution mode can do. The deployment of well programmed Intelligent Agents in the OS or the SW of the social machine may prove most useful during implementation. The social machines rely on the Internet knowledge banks to verify its validity and the current status of knowledge in the social context. This scenario is most unlikely if knowledge is to be validated at the 7+ and 7++ levels since *N*'s, *\**'s and *V*'s tend to be infinite. Unless

the validation is confined to realistic boundaries, the machine can wander off into oblivion

The gratification of all levels of need(s) of the entity are all levels (1 through 7++) are checked out sequentially (pipeline, as in SISD architectures) or in parallel (as in MISD architectures). In the first trial if the confidence level of the solution is not reached, then examination of the knowledge block is reiterated by a very similar machine using more accurate criteria for testing the given block of knowledge.

#### V. SOCIAL INTELLIGENT AGENTS IN NATURE AND PHYSIOLOGY

Since the beginning of human communication, unspoken intelligence has prevailed that makes human beings and living species “read” the moods, passions, and expressions of the communicating entities. Face being an index of the mind since millennia expresses emotions. Speech is more precise and the communication is strengthened. Body language, eye contact, posture, movements contribute to making social

contact with the “other” entity<sup>2</sup>. In this context, social intelligent agents (SIA’s) have prevailed long before Intelligent Agents (IAs) in AI. This example of SIA is from the acquire intelligence. Social intelligent agents are generally inactive but act to accomplish a preprogrammed goal for the hosting entity.

At the initiation of any social contact, dialogue, or even a monologue, an environment of the achievement of the goal(s) is setup. These goals can be cooperative, neutral, or conflictive, but they do influence the entities unless the deadlock [2] is total and no compromise from either side. The net effect of the interaction is zero or an inference they both “agree to disagree” or “disagree to agree” and contact is terminated. In essence, all social interactions have some outcome. Social intelligent agents (revealed or concealed) are active consciously or subconsciously. When they are detected by the entities or social machines, the outcome can be expedited without expending much human energies or computer time. There are numerous examples of positive and negative SIA’s that prime the entity towards positive or negative intelligence and the following actions. These social intelligent agents can be genetic, they can be learned and in rare cases they are subconscious or even inspired. In the following sections the effects of  $\pm V$ ’s are presented.

### 5.1 Anti-life Social Intelligent Agents ( $-SIA$ ’s)

When one of the communicators attempts to demean the other, or when one attempts the take unfair advantage over the other, anti-life SIA’s or  $-SIA$ ’s (such as destroy, kill, or hurt the offender) etc, can result. Such  $-SIA$ ’s appear to become  $+SIA$ ’s. The group of SIA’s is culture, situation and environment dependent. The mannerisms are taught and are learned, contested, discarded, rebuked, but they express social information for the sensitive, the elite and the educated via the social agents.

The basis appears to be that when one performs an anti-life Verb Function (sections 4 and 4.2), the SIA withdraws and rescues itself from damage at any level of its 1 through 7++ needs. Negative SIA’s also exist in situation of war and combat when an opportunity arises to hurt or gain advantage over the other. In a sense this is opportunism and is a common mode of behavior in business, politics, and debates. Almost all entities follow this mode of behavior or social verb functions (politicians, petty thieves, individuals, and even nations) to avoid punitive actions or danger.

### 5.2 Pro-life Social Intelligent Agents ( $+SIA$ ’s)

The examples of genetic and  $\pm SIA$ ’s are generally inactive but act to protect the entity, are built in nature. For example, when a child prevents itself from falling, when it touches something too hot or cold, when it cries when somebody tries to hurt makes this group of  $+SIA$ . In general, social machines can

<sup>2</sup> The reference to the “other” is borrowed from the writings of George Herbert Mead. His contributions to social science are documented in his many books, especially, “Mind, Self and Society” [3].

identify the two types of SIA’s and bring in a criterion for making educated decision for the action(s) to follow. For example, when the judicial system makes reversal in the sign of one or more SIA (e. g., kill, hurt, wound, etc.), the sign of the SIA is affirmed and the social machine learns to update the decision criterion (or criteria).

### 5.3 Role of Decision Makers in the Validity of $\pm SIA$ ’s

Social norms are alive, adaptive and self learning. In the intelligent species, the mind learns and updates these  $+SIA$ ’s. When social machines are to be programmed with traditional AI based IA’s, the humanistic criteria of learning need to be embedded in the OS or Applications. The social (machine) SW has not been developed as mindfully as the scientific SW and the machines are likely to yield erratic decisions unless the human learning algorithms are appropriately implanted in the social software.

The part played and the actions of the social agents (such as the highest level political leaders, Supreme Court Judges, police commissioners, etc.) influences the actions that tend become a basis for learning. When the social agents are just, honest, sincere, and practice the highest levels of morality and ethics, the social machine will learn from their actions, thus reinforcing the upward trend of the society, culture or nation; and conversely when the character of such social agent is at stake, the society falls into a negative trap reinforcing the fall of the society, culture, or the nation.

These two effects are depicted in Figure 3, but the important inference is that the social machines should be able to separate the trend and its cause(s) from the noise and distracting influence(s) of petty thieves, thugs, and criminals. When classified as pro-life  $SIA$ ’s or ( $+SIA$ ’s) and anti-life  $SIA$ ’s or ( $-SIA$ ’s) that have been documented, then the quantitative basis for separating the elite ( $+NO$ ’s) from the thugs ( $-NO$ ’s) can be firmly established in the society. The social machines have a good basis for yielding valid policy decisions.

Also depicted in Figure 3, social machines reinforce the basis and the trend appears to have an exponential and expansionary character in both + and – directions. In essence social and behavioral oscillations in the society, culture and nation will exist as long as humans retain their self justification incorrigible error-ridden nature and instinct. This tendency of being proud and incorrigible continues even when it is erroneous is a large obstacle to reason and path correction; to abandon the –  $SIG$ ’s and move on to  $+SIG$ ’s. Perhaps it is human nature to defend the Ego<sup>3</sup> even when it is illogical and unscientific.

<sup>3</sup> Numerous examples exist from the past. For instance, Bush’s defends his invasion of Iraq based on false propaganda about weapons of mass destruction (WMD) in Iraq and passes the buck to false news-bearers from Israel, Moa’s burning of historical books in China during his regime, more recently Putin’s Terrorism during Russian Invasion of Ukraine during March 2022.

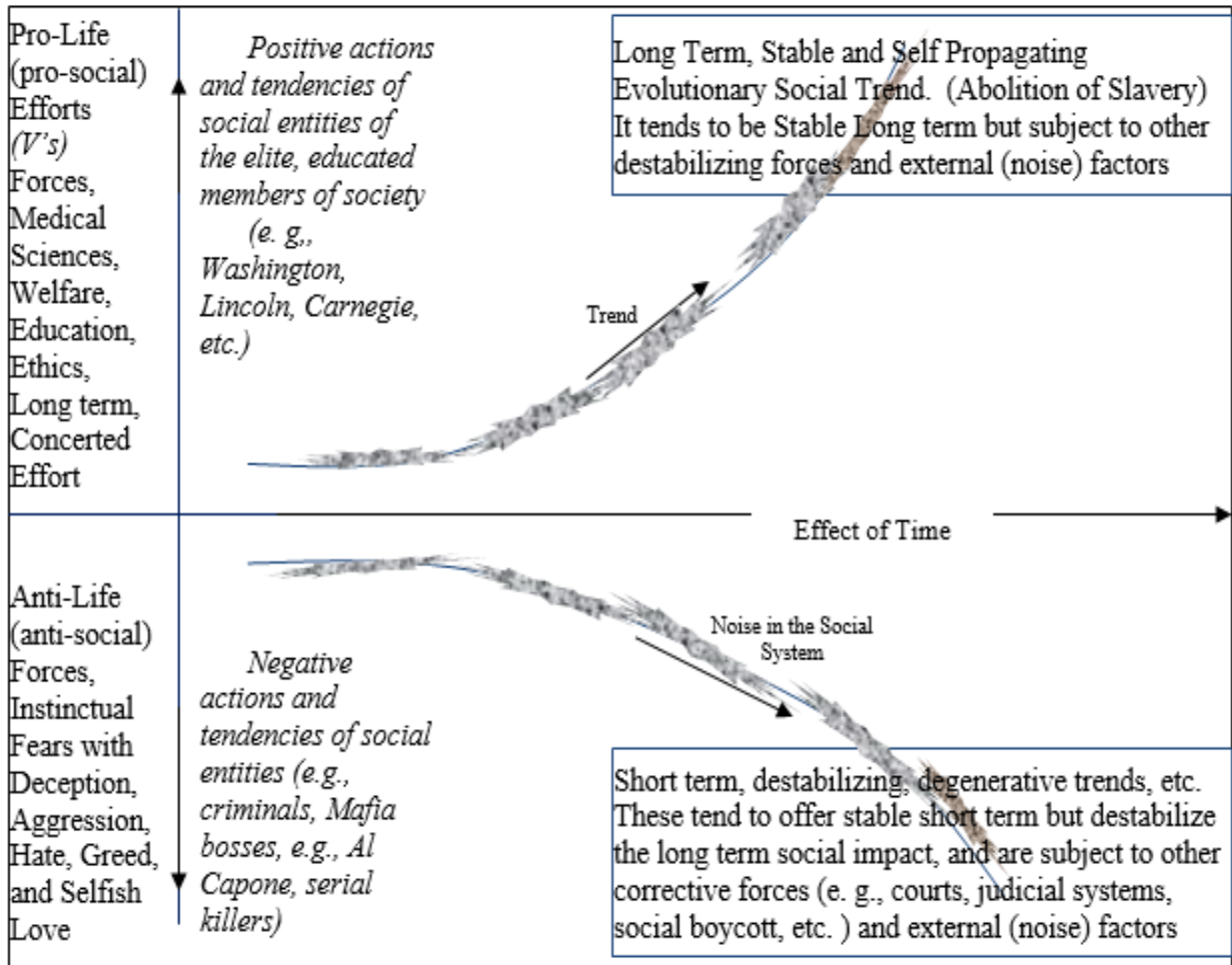


Figure 3. Basis for the Intelligent Agents to learn from the Decision Making Social Agents. The basis is copied from the intelligentsia of the positive and negative noun objects ( $\pm NO$ 's) and thinkers and doers.

## VI. CONCLUSIONS

Abstractions of good and evil tied to physical social agents and entities are introduced in this paper. These abstractions are like social trees that have seeds, roots, stem, branches and leaves. Social agents harvest these abstract trees in the social space. They make themselves healers, spectators, and killers by choosing to be help and propagate positive life force for themselves and for others, being mere on lookers without participating in pro-life or anti-life force, or by being destructive to the life (their own and that of others) in general. The choice is very personal and individual. There are gross agents for human welfare, massive crooks, petty little knowledge workers and street thugs who fulfill their own ambitions and goals in this physical world of reality. But their actions are driven by the integrated inspired, genetics, and learned intelligences.

In addition, this paper also introduces a series of seminal concepts; and the most important ones are presented in this section as follows:

- a) that the actions ( $V$ 's) of good or evil is specific to social agents. These actions and events can be linked

responsible positive or negative changes in the society,

- b) that good and evil is proposed to be recast as pro-life and anti-life activities and actions in the global society and such activities and events can be tracked, quantified and cataloged,
- c) that good or evil of social agents or entities can be identified and quantized by the quality and number of pro-life activities by that any specific social agent or entity has imposed on the global society<sup>4</sup>; or conversely by the quality and number of anti-life that any specific social agent or entity has imposed on the global society<sup>5</sup>,

<sup>4</sup> The prolonged after effects of such (pro-life or anti-life) actions and events caused by social agents and entities play a (healing or killing) effect on the global society.

<sup>5</sup> This process is much keeping a cumulative score on the Global social score board. A moving average of the past 5, 10, 15 years (e.g., prisons, social offences, convictions, rapes, etc.) would indicate how the entity has fared in the society, culture and/or shrinking Internet society. This process is somewhat similar to the credit rating in the financial markets.



- d) that social agents and entities are the cause of such pro-life and anti-life activities by social; agents and entities,
- e) that social machines will track and tie the pro-life and anti-life activities to specific social agents and entities. Such machines deploy Intelligent Social Agents (ISA's) that sense and quantify eminent threats, warn and threats with reasonable certainty as much as weather tracking systems can predict rain, snow, storm and their timings.
- f) that the extent of welfare or wickedness of the social agents or entities can be measured by unbiased social machines and by statistical comparison between the healers and killers from (short term, mid-term and/or long-term) historical data and current Internet knowledge banks.
- g) that these social programs can be customized and receive very personalized and quantized ways to handle deep social relations and deep learning from prior and/or normal social relations. The results are statistical but offer a confidence level in what they offer as selective suggestions. Social Machines will compliment Intelligent Internets and their knowledge bases and this makes them dynamic, time, society and culture dependent.

In what the new social machines and programs offer, the logic for the inference can be traced back to the inputs to programs and the SSW. The confidence levels can also be numerically evaluated. Currently the medical profession relies heavily on accumulated knowledge and the human judgment is based on Expert Systems and doctors own personal and mental knowledge base. The social machines remove much ambiguity in counseling; it brings more logic into the handling relations between entities and (positive and negative) social agents and their deployment. It is our hope that the concept of good and evil will be replaced with what social intelligent agents (SIA's) are most likely to accomplish in any set of social circumstances.

APPENDIX A LIST OF ABRIVIATIONS AND SYMBOLS

1 to 7++	Levels of hierarchical need of humans. Limited to 3 levels by Freud, limited to 5 by Maslow, and extended to 7, 7+ and 7++ by Ahamed
$\delta k, \Delta k$	Incremental changes of knowledge by one (or more) actions of one (or more) social entities
AI	Artificial Intelligence
IA	Intelligent Agents as they exist in the Artificial Intelligence
k or K	Knowledge block, k is a small segment of knowledge; K is a large segment of knowledge.

MIMD	Multiple Instruction Multiple Data organization
SIA	Social Intelligent Agent(s)
SIA <sup>-</sup>	Social Intelligent Agent Anti-life (in negative sense) that initiates/promotes/propagates forces against healthy life forces and/or works to oppose any active SIA <sup>+</sup> (s).
SIA <sup>+</sup>	Social Intelligent Agent Pro-life (in positive sense) that initiates/promotes healthy life in mind, self and society. It works to oppose any active SIA <sup>-</sup> (s).
SISD	Single Instruction Single Data Organization
SIG	Self Interest Groups in Society; the member's only concern is their own (financial) welfare. A ruthless group formed to maximize their profit from the Military Industrial Complex in the US.
SSW	Social SW in the Social Machines
$t$ and $\delta t$	time and increment of time for an action to be completed

*Objects, Social Entities, and Social Intelligent Agent(s):*

**N, NO, n, no** Noun object(s) that initiates an action(s) ( $V, v, VF, vf$ ) in a pre-selected convolution format \*.

*Verbs and Verb Functions:*

**V, v, VF, vf** One or more series of action(s) initiated or continued

By a social agent or an entity

**W** Wisdom derived from accumulated knowledge by Wisdom Machines [4]

*Convolutions:*

\* Or \*s One or more preselected mode of an Object to act with the other or in a society

*Representations of concepts:*

The following statements should be treated in numerical identities. They represent conceptual equivalencies by implying the a sequence. For example, when a noun object ( $n$  or  $N$ ) accomplishes an action ( $v$  or  $V$ ) in an acceptable style or convolution (\*), then an increment of knowledge  $\delta k$  is the result and conversely every  $\delta k$  has some prior  $n$  or  $N, v$  or  $V$ , and \* associated with it.

$$\{(\delta k)\} = n*v \text{ or } N*V$$

$$K = \Sigma \delta k's \text{ or } \int (\delta k's). dk, \text{ etc.}$$

In general, when there are numerous variables the summation or integration should be done over all variables.



W = summation or integration over all areas of knowledge to reach the wisdom represented as

$$W = \sum \delta k's \sum \delta t's \text{ or } \int (\delta k's) .dk \int (\delta t's) dt, \text{ or } \iint \delta k = f(k, t). \\ dt, dk, \text{ etc.}$$

and presented in Reference [4]

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written in collaboration with Professor R. Kavesh, Former Chair, Department of Economics, Stern Graduate School of Business Administration, New York University.

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