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Empathy and Conflict Strategy: An Inquiry into T. Schelling's 'The Strategy of Conflict'

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Abstract

The paper based on the T. Schelling's strategy of conflict (Schelling 1960) deals with the equilibrium conditions and strategy between empathy and conflict. Our research explores whether the win-win-win Papakonstantinidis model (2002) as a conflict strategy can coexist with empathy as a pure behavioural condition aimed at improving bargaining power. Analytically, we investigate the interaction, empathy-global bargain, in a subjective and objective way.

Keywords: *strategy, conflict, empathy, social bargain, the win-win-win Papakonstantinidis model.*

Introduction

Let us start from the conflict situation, as the situations where there is a common interest as well as conflict between adversaries: negotiations, war and threats of war, criminal deterrence, extortion, tacit bargaining. It proposes enlightening similarities between, for instance, maneuvering in limited war and in a traffic jam; deterring the Russians and one's own children; the modern strategy of terror and the ancient institution of hostages (Schelling 1960).

Based on Schelling's (*Ibid.*) ideas we choose the prisoner's and the hawk and dove games because they are simplest negotiation environment with inequity distribution in equilibrium:¹

¹ The name 'hawk-dove' refers to a situation in which there is a competition for a shared resource

- to determine the relationship of 3-win with empathy in every human behaviour. This plot (if any) seems to be the generating cause of any behaviour in any bazaar between two and much more in three negotiators. The contribution of the third is of crucial importance, while the negotiation between four and above weakens the negotiation because it allows for collusion (Theocharis 1955), something that the three-person negotiation does not allow.
- to facilitate to clarify the relation (if any) between ‘tacit knowledge’ and empathy and sympathy in any bargain.
- to create a coherent base of arguments toward proving the influence of the empathy over a preferences' scale.
- also to find relations between social preferences – bargaining behaviour (see Papakonstantinidis and Aziz 2020).

Definitions

Empathy Definitions

Empathy definitions² encompass a broad range of emotional states, including caring for other people and having a desire to help them; experiencing emotions that match another person's emotions; discerning what another person is thinking or feeling; and making less distinct the differences between the self and the other. It can also be understood as having the separateness of defining oneself (*Ibid.*).

Definition of empathy:

1. The action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another of either the past or present without having the feelings, thoughts, and experience fully communicated in an objectively explicit manner and the capacity for this as well (*Ibid.*).
2. The imaginative projection of a subjective state into an object so that the object appears to be infused with it.

Sympathy vs. Empathy

Sympathy and empathy are closely related words, bound by shared origins and the similar circumstances in which each is applicable, yet they are not synonymous. For one thing, sympathy is considerably older than empathy, having existed in our language for several hundred years before its cousin was introduced, and its greater age is reflected in a wider breadth of meaning. Sympathy

and the contestants can choose either conciliation or conflict; this terminology is most commonly used in biology and evolutionary game theory. From a game-theoretic point of view, ‘chicken’ and ‘hawk–dove’ are identical; the different names stem from parallel development of the basic principles in different research areas.

² See URL: <https://www.merriam-webster.com/dictionary/empathy#:~:text=%3A%20the%20action%20of%20understanding%2C%20being,in%20an%20objectively%20explicit%20manner>.

may refer to 'feelings of loyalty' or 'unity or harmony in action or effect', meanings not shared by empathy. In the contexts where the two words do overlap, sympathy implies sharing (or having the capacity to share) the feelings of another, while empathy tends to be used to mean imagining, or having the capacity to imagine, feelings that one does not actually have (Papakonstantinidis and Aziz 2020).

It is also the ability to feel and share another person's emotions. Some believe that empathy involves the ability to match another's emotions, while others believe that it involves being tender hearted toward another person (*Ibid.*).

Having empathy can include having the understanding that there are many factors that go into decision making and cognitive thought processes. Past experiences have an influence on the decision making of today. Understanding this allows a person to have empathy for individuals who sometimes make illogical decisions to a problem that most individuals would respond with an obvious response. Broken homes, childhood trauma, lack of parenting and many other factors can influence the connections in the brain which a person uses to make decisions in the future (*Ibid.*).

Martin Hoffman studied the development of empathy. According to Hoffman, everyone is born with the capability of feeling empathy. His theory (Hoffman 2000) of moral psychology and development is primarily focused on empathy and empathic distress, but also includes classic conditioning, cognitive reasoning, and principles of caring and justice. Cognitive reasoning and justice are especially integrated into Hoffman's theory in the more advanced stages of empathy development. This theory is comprehensive, and while much of it is supported by research, Hoffman makes use of many detailed anecdotes from interviews, open-ended research questions, and other sources to 'fill in the research gaps' in the comprehensive theory.

Virtually all of the information on Hoffman's theory in this essay has been extracted from his book published in 2000 entitled, *Empathy and Moral Development: Implications for Caring and Justice*. Our purpose is not to cover or summarize this book or entire theory, but only to provide some of the basic elements and bring forth what we consider to be the most relevant aspects of his theory to the development of empathy for nonhuman beings.

Since empathy involves understanding the emotional states of other people, the way it is characterized is derived from the way emotions themselves are characterized. If, for example, emotions are taken to be centrally characterized by bodily feelings, then grasping the bodily feelings of another will be central to empathy. However, if emotions are more centrally characterized by a combination of beliefs and desires, then grasping these beliefs and desires will be more essential to empathy. The ability to imagine oneself as another person is a sophisticated imaginative process. However, the basic capacity to recognize

emotions is probably innate and may be achieved unconsciously. Yet it can be trained and achieved with various degrees of intensity or accuracy.

Conflict Definitions

Among diverse theories of conflict – corresponding to the diverse meanings of the word ‘conflict’ – a main dividing line is between those that treat conflict as a pathological state and seek its causes and treatment, and those that take conflict for granted and study the behaviour associated with it (see Schelling 1960). Among the latter there is a further division between those that examine the participants in a conflict in all their complexity – with regard to both ‘rational’ and ‘irrational’ behaviour, conscious and unconscious, and to motivations as well as to calculations – and those that focus on the more rational, conscious, artful kind of behaviour. Crudely speaking, the latter treat conflict as a kind of contest, in which the participants are trying to ‘win’. A study of conscious, intelligent, sophisticated conflict behaviour – of successful behaviour – is like a search for rules of ‘correct’ behaviour in a contest-winning sense (*Ibid.*).

One can call this field of study the strategy of conflict.

1. We can be interested in it for at least three reasons. We may be involved in a conflict ourselves; we all are, in fact, participants in international conflict and want to ‘win’ in some proper sense. We may wish to understand how participants actually do conduct themselves in conflict situations; an understanding of ‘correct’ play may give us a benchmark for the study of actual behaviour (*Ibid.*).

2. The term ‘strategy’ is taken here from the theory of games which distinguishes games of skill, games of chance, and games of strategy, the latter being those in which the best course of action for each player depends on what the other players do. The term is intended to focus on the interdependence of the adversaries’ decisions and on their expectations about each other’s behaviour (*Ibid.*).

3. We may wish to control or influence the behaviour of others in conflict, and we want, therefore, to know how the variables that are subject to our control can affect their behaviour (*Ibid.*).

4. If we confine our study to the theory of strategy, we seriously restrict ourselves by the assumption of rational behaviour – not just of intelligent behaviour, but of behaviour motivated by a conscious calculation of advantages, a calculation that in turn is leashed on an explicit and internally consistent value system. We thus limit the applicability of any results we reach. If our interest is the study of actual behaviour, the results we reach under this constraint may prove to be either a good approximation of reality or a caricature. Any abstrac-

tion runs a risk of this sort, and we have to be prepared to use judgment with any results we reach (*Ibid.*).

Given that the resource is given the value V , the damage from losing a fight is given cost C :

Table 1. Payoff Matrix for Hawk-Dove Game

	meets Hawk	meets Dove
if Hawk	$V/2 - C/2$	V
if Dove	0	$V/2$

If a Hawk meets a Dove, he gets the full resource V to himself.

If a Hawk meets a Hawk, half the time he wins, half the time he loses. So, his average outcome is then $V/2 - C/2$.

If a Dove meets a Hawk, he will back off and get nothing – 0.

If a Dove meets a Dove, both share the resource and get $V/2$.

The actual payoff, however, depends on the probability of meeting a Hawk or Dove, which, in turn, is a representation of the percentage of Hawks and Doves in the population when a particular contest takes place. This, in turn, is determined by the results of all of the previous contests. If the cost of losing C is greater than the value of winning V (the normal situation in the natural world) the mathematics ends in an evolutionarily stable strategy (ESS), a mix of the two strategies where the population of Hawks is V/C . The population regresses to this equilibrium point if any new Hawks or Doves make a temporary perturbation in the population.

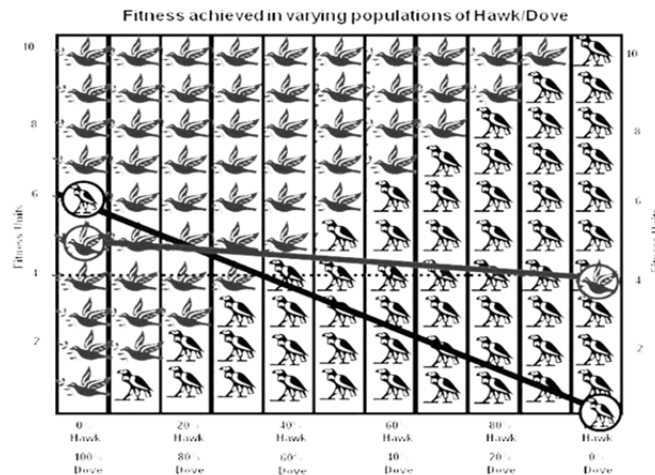


Fig. 1. Fitness achieved in varying populations of Hawk/Dove

Source: URL: <https://commons.wikimedia.org/wiki/File:HawkDove.jpg>.

Conflict Strategy

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The advantage of cultivating the area of 'strategy' for theoretical development is not that of all possible approaches it is the one that evidently stays closest to the truth, but that the assumption of rational behaviour is a productive one. It gives a grip on the subject that is peculiarly conducive to the development of theory. It permits us to identify our own analytical processes with those of the hypothetical participants in a conflict; and by demanding certain kinds of consistency in the behaviour of our hypothetical participants; we can examine alternative courses of behaviour according to whether or not they meet those standards of consistency. The premise of 'rational behaviour' is a potent one for the production of theory. 'Whether the resulting theory provides good or poor insight into actual behaviour is, I repeat, a matter for subsequent judgment' (*Ibid.*).

But, in taking conflict for granted, and working with an image of participants who try to 'win', a theory of strategy does not deny that there are common as well as conflicting interests among the participants. In fact, the richness of the subject arises from the fact that, in international affairs, there is mutual dependence as well as opposition. Pure conflict, in which the interests of two antagonists are completely opposed, is a special case; it would arise in a war of complete extermination, otherwise not even in war. For this reason, 'winning' in a conflict does not have a strictly competitive meaning; it is not winning relative to one's adversary. It means gaining relative to one's own value system (*Ibid.*).

According to Luis Alejandro Palacio Garcia and Alexandra Cortes Aguilar (2010), a player can increase his bargaining power in a negotiation process if he decides to bind himself in a credible way, rejecting with premeditation some opportunities. The lack of freedom of a player has strategic value because it changes the expectations that others have on the future answers that he could give, and this restriction can be used in his own benefit. It is easy to identify

examples of commitment in daily life or economic situations, but military strategy is the most salient case because conflict is inherent to it. Announcing that our army is ready to fight up to the last breath is essential to deter an opponent from entering into a bloody battle, since what is looked for is that the rival gives himself up without wasting valuable resources (Papakonstantinidis and Aziz 2020).

In Schelling's (1960) seminal work, he distinguishes between two different types of commitment: ordinary commitment and threats. The ordinary commitment is the possibility of playing first, announcing that our decision has already been taken and that it is impossible to be changed, which forces the opponent to take the final decision. This is the case of the famous military strategy 'burn the ships' illustrated above. On the other hand, threats occur when the second mover convincingly pledges to respond, in a specified contingent way, to the opponent's earlier choice (Hirshleifer 2000).

The distinctive feature of a threat is that the sender has no incentive to carry it out either before the event or after. This leads us to questioning the credibility of this strategic movement, because announcing that a player is going to play in an opposite way to the game incentives does not change the opponent's beliefs. The message 'never retreat, never surrender' is not enough to increase the bargaining power; it is necessary that the specified action is actually the one that will be played. A message is credible if it makes clear to the opponent that the play cannot change, because it is too costly or even impossible to turn back (Papakonstantinidis and Aziz 2020).

Analysis

International Strategy: The Strategy of Conflict

Strategy is not concerned with the efficient application of force but with the exploitation of potential force. It is concerned not just with enemies who dislike each other but with partners who distrust or disagree with each other. It is concerned not just with the division of gains and losses between two claimants but with the possibility that particular outcomes are worse (better) for both claimants than certain other outcomes. In the terminology of game theory, most interesting international conflicts are not 'constant-sum games' but 'variable-sum games': the sum of the gains of the participants involved is not fixed so that more for one inexorably means less for the other. There is a common interest in reaching outcomes that are mutually advantageous (Schelling 1960).

To study the strategy of conflict is to take the view that most conflict situations are essentially *bargaining situations*. They are situations in which the ability of one participant to gain his ends is dependent to an important degree on the choices or decisions that the other participant will make. The bargaining may be explicit, as when one offers a concession; or it may be by tacit maneuver, as when one occupies or evacuates strategic territory. It may, as in the or-

dinary haggling of the market-place, take the status quo as its zero point and seek arrangements that yield positive gains to both sides; or it may involve threats of damage, including mutual damage, as in a strike, boycott, or price war, or in extortion (Schelling 1960).

Viewing conflict behavior as a bargaining process is useful in keeping us from becoming exclusively preoccupied either with the conflict or with the common interest. To characterize the maneuvers and actions of limited war as a bargaining process is to emphasize that, in addition to the divergence of interest over the variables in dispute, there is a powerful common interest in reaching an outcome that is not enormously destructive of values to both sides. A 'successful' employees' strike is not one that destroys the employer financially, it may even be one that never takes place. Something similar can be true of war (*Ibid.*).

Threats

Every negotiator faces threats at the bargaining table. How should you respond when the other side threatens to walk away, file a lawsuit, or damage your reputation? These negotiation tips will help (Papakonstantinidis and Aziz 2020).

Direct counterattacks are rarely the answer. Your threats may not be as powerful or credible as the other side's, or they could launch an uncontrollable spiral of conflict. Alternatively, you might be tempted to immediately concede to your opponent's demands, but that would only reinforce his domineering tactics (*Ibid.*).

Our *deal* approach allows you to respond to threats without conveying weakness or escalating the conflict, redirecting talks toward a focus on each other's interests (*Ibid.*).

The Third Participant

The suggested 'win-win-win Papakonstantinidis model' introduces the third participant (*Ibid.*: 36). According to Thomas Schelling's *The Strategy of Conflict*:

...How is the situation affected by a *third participant*, who has his own mixture of conflict and common interest with those already present, who has access to or control of the communication system, whose behavior is rational or irrational in one sense or another, who enjoys trust or some means of contract enforcement with one or another of the two principals? How are these questions affected by the existence of a legal system that permits and prohibits certain actions, that is available to inflict penalty on non-fulfillment of contract, or that can demand authentic information from the participants. To what extent can we rationalize concepts like 'reputation', 'face', or 'trust', in terms of a real or hypothetical legal system, in terms of modification of the participants' value systems, or in

terms of relationships of the players concerned to additional participants, real or hypothetical?

This brief sample of questions may suggest that there is scope for the creation of 'theory'. There is something here that looks like a mixture of game theory, organization theory, communication theory, theory of evidence, theory of choice, and theory of collective decision. It is faithful to our definition of 'strategy': it takes conflict for granted, but also assumes common interest between the adversaries; it assumes a 'rational' value-maximizing-in mode of behavior; and it focuses on the fact that each participant's 'best' choice of action depends on what he expects the other to do, and that 'strategic behavior' is concerned with influencing another's choice by working on his expectation of how one's own behavior is related to his.

There are two points worth stressing. One is that, though 'strategy of conflict' sounds cold-blooded, the theory is not concerned with the efficient application of violence or anything of the sort; it is not essentially a theory of aggression or of resistance or of war. Threats of war, yes, or threats of anything else; but it is the employment of threats, or of threats and promises, or more generally of the conditioning of one's own behavior on the behaviour of others, that the theory is about.

Second, such a theory is nondiscriminatory as between the conflict and the common interest, as between its applicability to potential enemies and its applicability to potential friends. The theory degenerates at one extreme if there is no scope for mutual accommodation, no common interest at all even in avoiding mutual disaster; it degenerates at the other extreme if there is no conflict at all and no problem in identifying and reaching common goals. But in the area between those two extremes the theory is noncommittal about the mixture of conflict and common interest; we can equally well call it the theory of precarious partnership or the theory of incomplete antagonism (Schelling 1960: 14).

Bargaining Power – The Power to Bind Oneself

'Bargaining power', 'bargaining strength', 'bargaining skill' suggest that the advantage goes to the powerful, the strong, or the skillful. It does, of course, if those qualities are defined to mean only that negotiations are won by those who win. But, if the terms imply that it is an advantage to be more intelligent or more skilled in debate, or to have more financial resources, more physical strength, more military potency, or more ability to withstand losses, then the term does a disservice. These qualities are by no means universal advantages in bargaining situations; they often have a contrary value (*Ibid.*).

Bargaining power has also been described as the power to fool and bluff, 'the ability to set the best price for yourself and fool the other man into thinking this was your maximum offer'. Fooling and bluffing are certainly involved; but there are two kinds of fooling. One is deceiving about the facts; a buyer may lie about his income or misrepresent the size of his family. The other is purely tactical. Suppose each knows everything about the other, and each knows what the

other knows. What is there to fool about? The buyer may say that, though he would really pay up to twenty and the seller knows it, he is firmly resolved as a tactical matter not to budge above sixteen. If the seller capitulates, was he fooled? Or was he convinced of the truth? Or did the buyer really not know what he would do next if the tactic failed? If the buyer really 'feels' himself firmly resolved, and bases his resolve on the conviction that the seller will capitulate, and the seller does, the buyer may say afterwards that he was 'not fooling'. Whatever has occurred, it is not adequately conveyed by the notions of bluffing and fooling (Schelling 1960: 23).

How does one person make another believe something? The answer depends importantly on the factual question, 'Is it true?' It is easier to prove the truth of something that is true than of something false. To prove the truth about our health we can call on a reputable doctor; to prove the truth about our costs or income we may let the person look at books that have been audited by a reputable firm or the Bureau of Internal Revenue. But to persuade him of something false we may have no such convincing evidence (*Ibid.*).

Intersecting Negotiations

If a union is simultaneously engaged, or will shortly be engaged, in many negotiations while the management has no other plants and deals with no other unions, the management cannot convincingly stake its bargaining reputation while the union can. The advantage goes to the party that can persuasively point to an array of other negotiations in which its own position would be prejudiced if it made a concession in this one. (The 'reputation value' of the bargain may be less related to the outcome than to the firmness with which some initial bargaining position is adhered to.) Defense against this tactic may involve, among other things, both misinterpretation of the other party's position and an effort to make the eventual outcome incommensurable with the initial positions. If the subjects under negotiation can be enlarged in the process of negotiation, or the wage figure replaced by fringe benefits that cannot be reduced to a wage equivalent, an 'out' is provided to the party that has committed itself; and the availability of this 'out' weakens the commitment itself, to the disadvantage of the committed party (*Ibid.*: 30).

Continuous Negotiations

A special case of interrelated negotiations occurs when the same two parties are to negotiate other topics, simultaneously or in the future. The logic of this case is subtler; to persuade the other that one cannot afford to recede, one says in effect, 'If I conceded to you here, you would revise your estimate of me in our other negotiations; to protect my reputation with you I must stand firm'. The second party is simultaneously the 'third party' to whom one's bargaining reputation can be pledged. This situation occurs in the threat of local resistance to local aggression. The party threatening achieves its commitment, and hence the credibility of its threat, not by referring to what it would gain from carrying

out the threat in this particular instance but by pointing to the long-run value of a fulfilled threat in enhancing the credibility of future threats (*Ibid.*: 31).

Knowledge Creation and Transfer – Types of Behaviour

Knowledge is one of the basic production factors owned by enterprises, and knowledge management is one of the main dynamic capabilities on which enterprises can base their competitive advantages. The creation, transfer, and later use of knowledge have become increasingly important, and multinational corporations (MNCs), being scattered in various places, constitute the appropriate environment to implement knowledge management processes meant to maximize their intellectual assets. This chapter has as its aim to answer three questions: (a) what actions do MNCs undertake in order to set knowledge management processes in motion; (b) what main variables impact on their knowledge creation capability; and (c) what main variables impact on their knowledge transfer capability? A qualitative research work based on a multiple case study has served to achieve that aim, allowing us to carry out an exploratory study of six MNCs which have shown their proactivity in the knowledge management area. The results of the analysis have led to eight propositions which highlight the most relevant variables facilitating the processes for the creation and transfer of knowledge within a MNC (Zaragoza-Saez *et al.* 2009; Papakonstantinidis and Aziz 2020: 40).

Knowledge Transfer

Knowledge transfer systems aid you in streamlining your knowledge which ensures that everyone in your team has the information they need to keep your business running smoothly. ‘Knowledge Transfer’ is a practical method for transitioning knowledge from one part of your business to another (Brown 2019: 41).

Knowledge transfer can help your business in the following ways:

- Accelerate the accumulation and dissemination of knowledge across your organization.
- Provide easy and rapid knowledge access to your team.
- Eliminate time and space constraints in communications.
- Stimulate associates to experience the value of sharing knowledge in providing custom-tailored service to customers.
- Respect the dignity of each individual by cultivating an environment that enhances his or her professional development and recognizes each person as a valued member of a service-oriented team (Papakonstantinidis and Aziz 2020: 42).

Neuroeconomics: Economy of the Mind

The most fundamental solution concepts in Game Theory – Nash equilibrium, backward induction, and iterated elimination of dominated strategies – are based on the assumption that people are capable of predicting others' actions. These concepts require people to be able to view the game from the other players' perspectives, *i.e.* to understand others' motives and beliefs. Economists still know little about what enables people to put themselves into others' shoes and how this ability interacts with their own preferences and beliefs. Social neuroscience provides insights into the neural mechanism underlying our capacity to represent others' intentions, beliefs, and desires, referred to as 'Theory of Mind' or 'mentalizing', and the capacity to share the feelings of others, referred to as 'empathy'. We summarize the major findings about the neural basis of mentalizing and empathizing and discuss some implications for economics (Singer and Fehr 2005).

In recent decades, research in interactive decision-making (Zaragoza-Saez 2009; Zaragoza-Saez and Claver-Cortés 2011) has convincingly proven that individuals are not the selfish and rational utility-maximizers of standard economic models. Several new models have been proposed, some of which introduce other-regarding preferences in the utility function (Rabin 1993; Fehr and Schmidt 1999), or limited cognitive capacity (Stahl and Wilson 1995; Camerer *et al.* 2005), and bounded rationality in various forms (Gigerenzer and Selten 2001; Crawford 2003). Although the behavioral models differ in many respects and all depart from the 'rational' benchmark, they still assume that players form sophisticated beliefs about other players' behaviors, and act consistently with these beliefs. The recent interdisciplinary literature on 'mind reading'; has fostered a plethora of studies on the mechanisms and conditions that favor or impede our understanding of the thoughts and feelings of others, including the conditions that allow us to 'see' a game from the vantage point of our opponent and to act moved by empathy, altruism and desire to reciprocate. Behavioral evidence on 'mind reading' in game playing is mixed: laboratory data suggest inconsistency between beliefs and choices (Costa-Gomes and Weizsacker 2008), acting as if the player has no beliefs at all (Weizsacker 2003), or 'suboptimal' behavior deriving from incorrect and/or simplified mental representations of the situation at hand (Devetag and Warglien 2008). Devetag and Di Guida (2010) show that when players face an interactive decision problem they have never encountered before look first for natural or obvious solutions, some of which imply 'neglecting' the other player and transforming the game into an individual decision making problem, while others imply relying on focal points leading to fair outcomes (Devetag *et al.* 2013).

Decision Making

Decision Making in a Social Group

Decision making in a social group displays two unique features. First, humans and other animals routinely alter their behaviors in response to changes in their physical and social environment. As a result, the outcomes of decisions that depend on the behaviors of multiple decision makers are difficult to predict, and this requires highly adaptive decision-making strategies. Second, decision makers may have other-regarding preferences and therefore choose their actions to improve or reduce the well-beings of others. Recently, many neurobiological studies have exploited game theory to probe the neural basis of decision making, and found that these unique features of social decision making might be reflected in the functions of brain areas involved in reward evaluation and reinforcement learning. Molecular genetic studies have also begun to identify genetic mechanisms for personal traits related to reinforcement learning and complex social decision making, further illuminating the biological basis of social behavior (Lee 2008).

The Problem of Decision Making

The problem of decision making is challenging, because the future outcomes from a particular action are seldom fully predictable. Therefore, decision makers must always take uncertainty into consideration when they make choices. In addition, such action-outcome relationships can change frequently, requiring adaptive decision-making strategies that depend on the observed outcomes of their previous choices (Lee 2008).

The Win-Win-Win Papakonstantinidis Approach

The win-win-win Papakonstantinidis approach is going to incorporate intuition, as there are two different paths, leading to the same conclusions. In particular, the mechanism jointed metallization with the win-win-win Papakonstantinidis model. The process: we firstly analyze the relation (if any) between bargaining and intuition: this relation defines a conditional (Bayesian) probability³ (Papakonstantinidis and Aziz 2020: 46):

$$P(A|B) = \frac{P(B|A)P(A)}{P(B)} \quad (\text{Eq.})$$

³ In probability theory and statistics, Bayes' theorem (alternatively Bayes' theorem, Bayes' law or Bayes' rule) describes the probability of an event, based on prior knowledge of conditions that might be related to the event. *E.g.*, if the risk of developing health problems is known to increase with age, Bayes' theorem allows the risk to an individual of a known age to be assessed more accurately than simply assuming that the individual is typical of the population as a whole (Papakonstantinidis and Aziz 2020: 46).

where A and B are events, and $P(B) \neq 0$.

$P(A | B)$ is a CP: the likelihood of event A , occurring given that B is true.

$P(B | A)$ is a CP: the likelihood of event B , occurring given that A is true.

$P(A)$ and $P(B)$ are the probabilities / of B , observing A and B , respectively they are known as the marginal probability.

Win-Win-Win: From the Behaviour Side

According to Spais and Papakonstantinidis (2011), the win-win-win Papakonstantinidis model is a methodological tool for conflict resolution, especially in the case of decision-making, or in forming ‘instant reflection winning strategies’ in the bargain (which is the frame). ‘Sensitization’ may be concerned as an information, thus changed the three parts’ imperfect information, into a complete information as Harsanyi’s conditional probabilities claims. It is a hard process in the bargain, which smoothes the angles of conflict or the payoffs/utilities (according to Nash). The ‘third win’ may be an umbrella, which conjoins different ‘dipolar relationships’. 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 *et al.* 2009). For the needs of the study, we 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 (*Ibid.*). 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 (*Ibid.*) 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 2011; Ternyik and Papakonstantinidis 2018), as to find the relation between ‘knowledge transfers and knowledge creation’, in the frame of the ‘Modern Innovation Theory (M.I.T)’ (Fischer 2008; Nonaka and others). Behavior thus may be resulted from this knowledge types’ synthesis, as the table below.

Table 2. Types of knowledge

Type of Knowledge-1	Type of Knowledge-2	Synthesis	Resulted Behavior
tacit	tacit	Sympathetic/ Intuition	Socialization
tacit	codified	Conceptual	Externalization
codified	tacit	Procedural	Internalization
codified	codified	Systemic	Networking
sympathetic	systemic	Conceptual	Sensitization
systemic	systemic	Procedural	Strategic

This table shows all the possible combinations of different types of knowledge and its results of a 'new behavior' coming from this combination. For example, 'tacit' to 'tacit' knowledge leads to 'sympathetic' thus producing 'socialization' as a form of new behavior, *etc.* Sensitization is introduced (regarding to integrated information), as the main variable of the bargain (the third part of the negotiation/the 'C' factor). The implementation of the LEADER EU (EEC) Commission Initiative in the less developed mountainous and island regions of our country was an excellent opportunity implementing the 'win-win-win Papakonstantinidis model' in the form of sensitization of the local population around a central priority theme (Papakonstantinidis and Aziz 2020: 41).

Thus, knowledge transfer in a 3D win reaction level could be as follows:

$[\lim_{i \rightarrow \infty} \sum^n \text{knowledge} \rightarrow \text{knowledge's synthesis} \rightarrow \text{behavior synthesis} \rightarrow \text{behavior change} \rightarrow \text{new bargaining conditions}]$

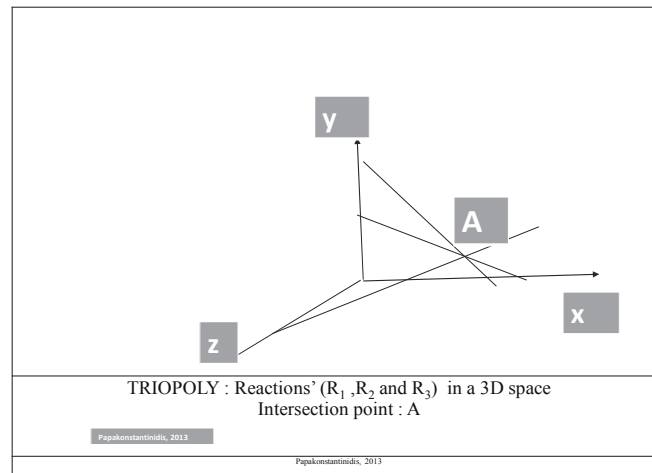


Fig. 2. Triopoly action

In such a landscape it could be easy to introduce a new socioeconomic tool: the 'Intermediate Community' (Papakonstantinidis 2011). It is a mental community that operates on the basis of social and community cohesion.

Disagreement Point

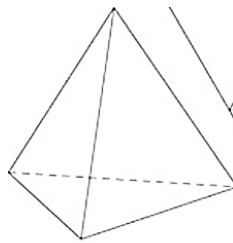
The disagreement point $d = (d_1, d_2)$ is the value the players can expect to receive if negotiations break down (Zeuthen 1930; Nash 1950; Rubinstein 1982). This could be some focal equilibrium that both players could expect to play. This point directly affects the bargaining solution, however, so it stands

to reason that each player should attempt to choose his disagreement point in order to maximize his bargaining position (Papakonstantinidis and Aziz 2020: 57). Towards this objective, it is often advantageous to increase one's own disagreement payoff while harming the opponent's disagreement payoff (hence the interpretation of the disagreement as a threat). If threats are viewed as actions, then one can construct a separate game wherein each player chooses a threat and receives a payoff according to the outcome of bargaining. It is known as Nash's variable threat game (Nash 1950).

Equilibrium Analysis

Strategies are represented in the Nash demand game by a pair (x, y) . X and y are selected from the interval $[d, z]$ is the disagreement outcome and z is the total amount of good. If:

$x + y$ is equal to or less than z , the first player receives x and the second y . Otherwise, both get d . Often $d = 0$ (*Ibid.*: 57).



A

Fig. 3. The Disagreement Point

In bargaining theory (Papakonstantinidis and Aziz 2020: 57), a ‘disagreement point’ or ‘threat point’ is the policy which is implemented if no agreement is reached. Typically, it is bad for both sides, but may be worse for one. The disagreement point has a profound impact on the outcome of negotiations, even if it never comes to pass. (In theory-land, say, in Nash or Rubinstein bargaining, there is never disagreement, but the threat of disagreement is a crucial determinant of the outcome.)

The two person bargaining problem consists of a pair (F, v) where F is called the feasible set and v is called the disagreement point.

- F , the feasible set of allocations, is a closed, convex subset of R^2 .
- The disagreement point $v = (v_1, v_2) \in R^2$ represents the disagreement payoff allocation for the two players. It is also called the status-quo point or the default point. This gives the pay-offs for the two players in the event that the negotiations fail. It may be noted that v is invariably chosen to belong to the feasible set F though it is not a mandatory technical requirement.

- The set $F \cap \{(x_1, x_2) \in R^2 : x_1 \geq v_1; x_2 \geq v_2\}$ is assumed to be non-empty and bounded (*Ibid.*: 58).

Justification for the Assumptions

- F is assumed to be convex. This can be justified as follows. Assume that the players can agree on jointly randomized strategies (correlated strategies). Consequently, if the utility allocations $x = (x_1, x_2)$ and $y = (y_1, y_2)$ are feasible and $0 \leq a \leq 1$ then the expected utility allocation $ax + (1 - a)y$ can be achieved by planning to implement x with probability a and to implement y with probability $(1 - a)$.

- F is assumed to be closed (*i. e.*, any convergent sequence in F will converge to a point that belongs to F). This is a natural topological requirement. If we have a sequence of allocations belonging to F and the limiting allocation does not belong to F , then we have an undesirable situation that is not acceptable (Papakonstantinidis and Aziz 2020: 58).

- The set $F_n \{(x_1, x_2) \in R^2 : x_1 \geq v_1; x_2 \geq v_2\}$ is assumed to be non-empty and bounded. This assumption implies that there exists some feasible allocation that is at least as good as disagreement for both players, but unbounded gains over the disagreement point are not possible. Both these requirements are reasonable (*Ibid.*: 58).

Utility and Disagreement Functions: The Win-Win-Win Equilibrium

Players develop their strategies in any interactive decision, behavior, thinking and living. Basically, there are two interactive actions (*Ibid.* 2020: 58).

1) People form behaviors within the bargain *based on personal, family, moral principles and even knowledge*.

2) People are gradually acquiring more permanent behaviors, ethical, transactional customs, from the Bargain, gradually passing on their thinking. For this reason we are referring now to the market society⁴ and not the market of the society, that is a market integrated into society:

- During the bargain, individuals develop ethics and generally behavior that influence their life;

- At any bargain, disagreement (or threat) point has a crucial role:

a) in a market society, disagreement point d is the value the players can expect to receive if negotiations break down;

b) in a social bargain, disagreement point d denotes the value the players can expect to receive if negotiations break down and the frames of the two bargainers' ethics (*Ibid.*: 59).

⁴ A society based around a market economy, especially one in which political and economic life are dominated by ideas of individual freedom and self-interest (see URL: https://www.lexico.com/en/definition/market_society/).

Players A and B – strategies/choices (each of them, with his/her own disagreement point d_1, d_2).

Social behavior: disagreement (or threat) point beyond individual disagreement.

$(u(x) - u(d))$ and
 $(v(y) - v(d))$ players A, B try to max x and y

$$\max \text{profit} = \max U_A \cap U_B = \max U_A \times U_B \Rightarrow \frac{d}{du} f = 0$$

$$\max(u(x) - u(d))(v(y) - v(d))$$

• In all bargains, there is usually a set S of alternative outcomes and both parties must agree on some element of this set. Once an agreement is reached, the negotiation ends and both sides can get their respective returns. If they do not reach an agreement, the result is usually the status quo. So if (t_1, t_2) are the odds of a disagreement point, then the interesting part of S consists of those outcomes that give both sides odds greater than those of the odds. So we can define a trading problem as follows (Papakonstantinidis and Aziz 2020: 59).

• A two person bargaining problem (or game) consists of two people or players 1 and 2, a set S of alternative outcomes, and a utility function u_i on S for each player i , so that (*Ibid.*: 59)

$$u_1(s) \geq t_1, u_2(s) \geq t_2, \forall s \in S$$

Suppose that $u(x), v(y), C(z)$ are utility function of the bargainers, A – B and the Community (C) and $u(d_1), v(d_2), C(d_3)$ are their disagreement – or threat – functions then,

$$u(x) - u(d_1)$$

$$v(y) - v(d_2)$$

$$C(z) - C(d_3)$$

form a new function of differences, *i.e.* $u(\delta_1), v(\delta_2), C(\delta_3)$.

• Each of them defines the margin between utility (or grade of satisfaction) and their disagreement point (*Ibid.*)

In the case of

$$u(\delta_1) = 0$$

$$v(\delta_2) = 0,$$

$$C(\delta_3) = 0$$

that means

$$u(x) - u(d_1) = 0$$

$$v(y) - v(d_2) = 0$$

$$C(z) - C(d_3) = 0$$

that characterize inelastic societies with fixed preferences and relations (Papakonstantinidis and Aziz 2020).

In the case of $u(\delta) \approx 0$ or near to a fixed price (*i.e.*, the individual I_u will veto at any time the result of the bargain does not exactly satisfy his/her own preferences), there is no room for social sensitivity, or even better, the I_u individual does not let any margin for ‘social bargaining’ (*Ibid.*).

- The further away from the level of personal $u(x)$, $v(y)$ and the social satisfaction $C(z)$ the point of disagreement / threat of disruption of negotiations is, the greater the degrees of freedom in negotiation and the higher the probabilities of agreement are.

This is all the more relevant when there are three parties (including the Community as a third and catalytic power in the negotiations) (Papakonstantinidis 2011):

a) The community, especially with the launched ‘Intermediate Community’ (*Ibid.*) works for both parties as a point of reference, for example the legal framework of the contracts;

b) The community ‘requires’ its own ‘satisfaction’ which coincides with the satisfaction of the general population of the community;

c) Overall satisfaction is divided into three and not two parties, so the hot decision-making pressure is less and more balanced;

d) New data are put on covering the ‘claims’ and perspectives of the three- and not two-parties of the negotiation;

e) Avoid collusion, which may be easier in negotiations between two and not the three parties;

f) It is not accidental that powers in a democratic society are divided between legislative, executive, and judicial powers;

g) The inclusion of the community in the win-win-win-win (as social cohesion, as a moral, as a culture, but also as a whole of its population) and not as a court, is based on its actual immediate interest which is the interest of many who may not be directly involved in the bargain;

h) The tendencies that develop in such a trilateral negotiation thus form a ‘memory’ state (something like court jurisprudence, or ‘good business ethics’). The difference here is that many forces are mobilized that shape a flexible behavior and not a strict relation established by case law (Levallois *et al.* 2012).

Social Bargaining in Terms of Disagreement: Triple Equilibrium. Ideal Situation – the Angels’ Moment

It is obvious that in a democratic society must be (Papakonstantinidis and Aziz 2020: 61)

$$\begin{array}{l} u(x) - u(d_1) = \max \quad u(d_1) = 0 \\ v(y) - v(d_2) = \max \quad \Leftrightarrow \quad v(d_2) = 0 \quad \text{the Angels' moment} \\ C(z) - C(d_3) = \max \quad C(d_3) = 0 \end{array}$$

The maximum profit for the society is (Papakonstantinidis and Aziz 2020: 61)

$$\begin{aligned} & \max(u(x) - u(d_1))(v(y) - v(d_2))(C(z) - C(d_3)) \\ & \max(u(x) - u(t))(v(y) - v(t))(C(z) - C(t)) \end{aligned}$$

Or, in threat terms:

- In a poetic expression, people have to set higher goals, in every interaction – negotiation, so they can express their disagreement at some point or threat point of stopping the negotiation;

- In an even more poetic expression, people must re-start dreaming of a better life again – one of the signs of globalization is to level everything for instant euphoria;

- However, many people have also stopped dreaming. Relationships, expectations, products and even lasting products (furniture-kitchens, *etc.*) and even the heads of state and government and relationships between them have all become instant;

- The deep wound of globalization is the conversion of everything from constant to instant;

- People have to accept this ‘instant point’, without history, future, and without dreams. Ignatius Ramonet supports – and not unfairly – ‘...the past – present and the future has been squeezed into the instant now, the supreme moment of history all made by the wish factory’ (Ramonet 1996).

- Of course, every citizen has (at least theoretically the right of veto), a veto

$$\forall u_i \in S(u_i - t_i), \exists t_i^*$$

so that

$$(u_1 - t_1) < (u_2 - t_2) < \dots < (u_i - t_i^*)$$

$t = \text{veto}$, or democracy perception

$$\begin{aligned} \text{MAX}(u_1 - t_1)(u_2 - t_2)(u_3 - t_3) & \rightarrow [(u_1 - t_1)(u_2 - t_2)(u_3 - t_3)]' = 0 \\ (u_1 - t_1) & = \text{MAX} \\ (u_2 - t_2) & = \text{MAX} \\ (u_3 - t_3) & = \text{MAX} \end{aligned}$$

where u_1 – utility expectation, t – the value the players can expect to receive if negotiations break down

$$\begin{aligned} t_1 & \rightarrow 0 \\ t_2 & \rightarrow 0 \\ t_3 & \rightarrow 0 \end{aligned}$$

if $u(x)$ $v(y)$ $C(z)$ are the utility functions of A – B – C (community) bargainers, then

$$\max(u(x) - u(d))(v(y) - v(d))(C(z) - C(d))$$

must be the overall Social Equilibrium or the 'Angel's Moment' if $u(x) - u(d) = 0$, and/or $v(y) - v(d) = 0$, and/or $C(z) - C(d) = 0$, then the multiplication product will be also zero.

Otherwise, there will not be agreement or *social bargain*.

At any case, the $(A - B)$ bargainers and the Community as the third player in the Bargain in the form of Law, or, even more of the 'contract social' (Rousseau 1752) must 'push' their own 'Disagreement Points' as far as possible beyond *individual expectations* so to maximize their own profits and all of them to maximize the social profit.

If this will happen, then a new situation will be resulted even in dt period: the 'Angel's Moment'.

Conclusions

1. Empathy as the capacity to place oneself in another's position, maybe the point in social sciences in the future.
2. Empathy is the key to conflict resolution or management.
3. In a three-game conflict, the less disagreement, the more conflict resolution.
4. The win-win-win Papakonstantinidis model is an approach, among others, that 'participates' in the process of conflict resolution, via empathy, toward the 'angel's moment'.
5. We pointed out that Conflict resolution is conceptualized as the methods and processes involved in facilitating the peaceful ending of conflict and retribution.
6. For this purpose we launched the 'Intermediate Community'. It is the intersection between empathy and conflict toward ethical values and reality (Papakonstantinidis 2011).
7. The suggested model (win-win-win) as a Nash equilibrium extension moderates the 'corners' of the conflict, thus accepting more empathy and less conflict.
8. Finally, one can expect that the next generations will establish the conditions of new life perceptions, based on ecological and social values.

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