Towards a Comprehensive Solution in Cyprus: Breaking Away from the Prisoner's Dilemma

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1. Introduction

Game theory is an important theoretical approach in understanding bargaining and strategic decision making. Game theory is an especially useful tool in understanding conflicts, as well as the bargaining situations and prospects for cooperation (i.e., resolving conflicts), from the perspective of the strategies and the tactics of the actors (players) who are involved in the conflict.

In a game theoretic setting, the players choose among alternative options in order to maximize their respective payoffs. The key concept is rationality which means choosing the best means to gain a predetermined set of ends. In a game theoretical setting, then, players rationally seek to maximize their self-interests against others who behave similarly.

The game theoretical analysis of the Cyprus conflict which is described as an iterated Prisoner's Dilemma (Sözen 1999, Yeşilada and Sözen 2002) shows the power of game theory as an analytical tool in analyzing conflict situations, as well as it gives hints of how to transform a non-cooperative atmosphere into a cooperative one.

In a repeated Prisoner's Dilemma situation, a degree of cooperation can be achieved by inducing the conflicting sides to adopt a Tit-for-Tat (TFT) strategy (Axelrod 1984). Here, a skilled mediator needs to induce one side to make a gesture or show a sign of goodwill. Once the two sides make goodwill gestures and adopt a TFT strategy, there is possibility for cooperation to continue. This cooperation will continue as long as the players prefer the side payments and/or abiding by the agreements over the option of defection in order to win unilaterally.

2. Theory of evolution of cooperation

Is cooperation possible in a world of egoists? That is, is cooperation possible in a Darwinian environment? If it is possible, then what are the conditions to initiate and sustain cooperation in such an environment – that looks like a Prisoner's Dilemma? These are questions that many scholars as well as practitioners have been asking for a long time. "We all know that people are not angels, and they tend to look after themselves and their own first. Yet we also know that cooperation does occur and that our civilization is based upon it. But, in situations where each individual has an incentive to be selfish, how can cooperation ever develop?" (Axelrod 1984: 3).

Axelrod and Hamilton (1981) and Axelrod (1984) developed a theory of cooperation that tries to explain what is needed for cooperation to emerge in situations where the actors behave *rationally* and act on their own self interests. His theory is based on examining how individuals who act on their self interest without the coercion or assistance of a central authority choose to cooperate with each other, unlike what Hobbes (1651/1962: 100) asserted - that is cooperation is possible only by the involvement of a central authority.

For Axelrod and Hamilton (1981: 1391), *initiation* and the *maintenance* of cooperation are the two most important difficulties. Then, what type of strategy makes it possible to initiate and maintain cooperation in environments where the actors act on their self-interest? In order to find an answer

to this question one needs to look at how Axelrod and Hamilton (1981) conceptualized the evolution of cooperation in three categories:

- 1. Robustness
- 2. Stability, and
- 3. Initial viability

Robustness of tit – for – tat (TFT)

According to Axelrod and Hamilton, cooperation by using tit-for-tat (TFT) strategy through *reciprocity* is a robust strategy that can flourish in a "variegated" setting. (Axelrod and Hamilton 1981: 1393). In the scientific experiment conducted, TFT comes out beating all the other results. Here TFT "went to fixation." (Axelrod and Hamilton 1981: 1393).

Stability

Axelrod and Hamilton assert that in cases where it is clear that the actors continue interacting with each other there TFT comes out as a stable strategy. In other words, if the actors in interaction know that there is a good possibility that they will meet again, then they tend to maintain their relationship or interaction based on TFT strategy, that is reciprocating according to the other's previous act. (Axelrod and Hamilton 1981: 1393).

Initial Viability

Axelrod and Hamilton found out that TFT was not the only strategy that could be evolutionarily stable. They also discovered that *defection* in all cases is evolutionarily stable. Then, how can cooperation start at the first place? (Axelrod and Hamilton 1981: 1394). In order to answer this question, one needs to look at Prisoner's Dilemma-like situations more closely.

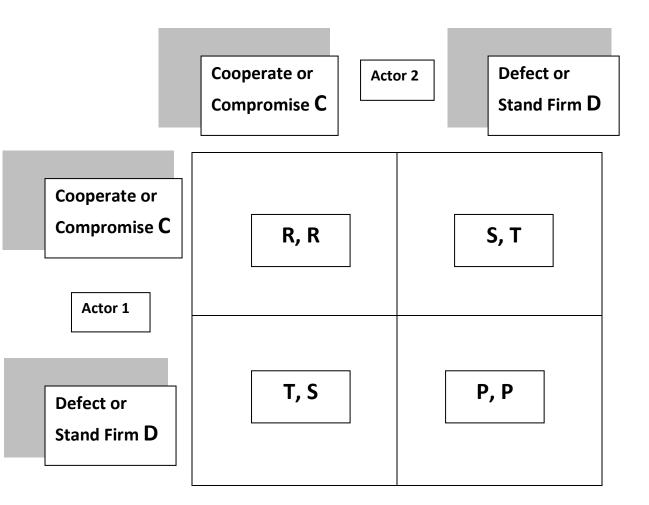
Prisoner's Dilemma¹

Prisoner's Dilemma is a metaphor that explains the case when "pursuit of self-interest by each leads to a poor outcome for all." Prisoner's Dilemma game is the best representation of this situation without dealing with the unique details of each case. (Axelrod 1984: 7). In a Prisoner's Dilemma game where the actors do not meet again defection is the dominant strategy of the actors, since it gives a higher payoff than cooperation. Here, the dilemma is that if both actors defect, then both

¹ "The Prisoner's Dilemma is simply an abstract formulation of some very common and very interesting situations in which what is best for each person individually leads to mutual defection, where everyone would have been better off with mutual cooperation." (Axelrod 1984: 9).

will get worse payoffs than in case both had cooperated. (Axelrod 1984: 8). "Thus two egoists playing the game *once* will both choose their dominant choice, defection, and each will get less than they both could have gotten if they had cooperated." (Axelrod 1984: 10). For the graphical description of Prisoner's Dilemma see Figures 1-3.

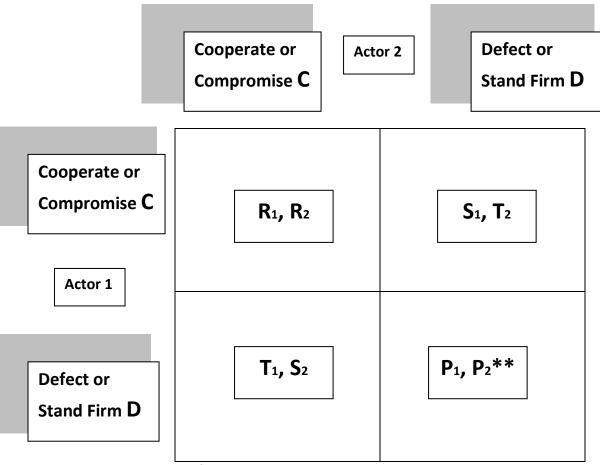
Figure 1: Strategic Game Matrix*



- T: temptation to win
- R: reward for mutual compromise
- P: punishment against mutual defection
- S: sucker
- (It is commonly agreed that R>(S+T)/2

When the preference ordering of the game is T>R>P>S, the game is a Prisoner's Dilemma.

Figure 2: Prisoner's Dilemma Game

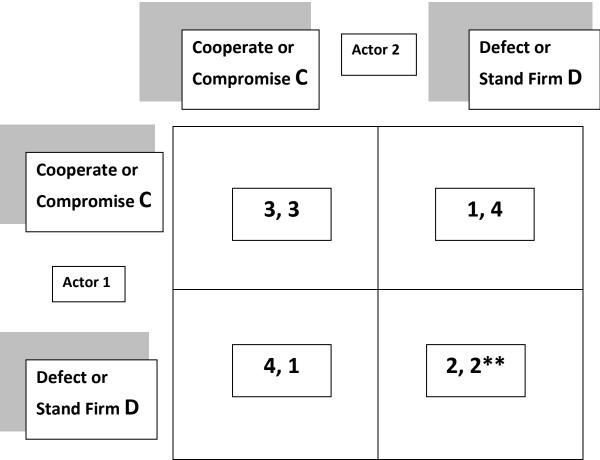


** Nash equilibrium²

http://www.investopedia.com/terms/n/nashequilibrium.asp).

² According to Investopedia website, "A concept of game theory where the optimal outcome of a game is one where no player has an incentive to deviate from his or her chosen strategy after considering an opponent's choice. Overall, an individual can receive no incremental benefit from changing actions, assuming other players remain constant in their strategies. A game may have multiple Nash equilibria or none at all. This concept is named after its inventor John Nash and is incorporated in multiple disciplines (ranging from behavioral ecology to economics)." (accessed on 10 February 2010,





** Nash Equilibrium

As it is seen in the figures above, the Nash Equilibrium is where the two actors are worse off – where both defect - compared to the case where they cooperated. Then, what makes cooperation emerge in a Prisoner's Game-like situation? "What makes it possible for cooperation to emerge is the fact that the players might meet again. This possibility means that the choices made today not only determine the outcome of this move, but can also influence the later choices of the players. The future can therefore cast a shadow back upon the present and thereby affect the current strategic situation." (Axelrod 1984: 12). In other words, if the game is not one-shot but repeated, that is an iterated Prisoner's Dilemma game where the actors meet again and again, then there is possibility for the players to escape from their dominant strategy of defection and cooperate.

. .

"It is possible to imagine that the benefits of cooperation in Prisoner's Dilemma-like situations can begin to be harvested by groups of closely related individuals. Obviously, as regards pairs, a parent and its offspring or a pair of siblings would be especially promising, and in fact many examples of cooperation or restraint of selfishness in such pairs are known." (Axelrod and Hamilton 1981: 1394).

It is proven that iterated Prisoner's Dilemma-like situations can transform where cooperation takes place through involving TFT strategy. What is suggested here is for the players to cooperate on the first move and then reciprocate according to the behavior of the other in the preceding move.

According to Axelrod (1984: 54), TFT strategy is successful, because

- (i) It is *nice*, that is, you are not the first one to defect.
- (ii) It is *retaliatory*, that is, you can respond to the other player's defections with defection.
- (iii) It is *forgiving*, that is, you have the chance to punish and then cooperate after a defection by the other player.
- (iv) It is *clear*, that is, it is easy for the other player to understand the rules of the game.

3. Background of Cyprus Negotiations

Although the serious inter-communal negotiations had started in 1968, they were disrupted by the Greek coup and Turkish military intervention in 1974. It suffices to indicate here that during 1968-1974 period, the position of the Greek Cypriot side was to turn the Republic of Cyprus into a unitary Greek Cypriot state, while the position of the Turkish Cypriot side was to return to the 1960 state of affairs, especially when *Taksim* – partitioning of the island between Turkey and Greece – looks almost impossible.

It was the 1974 war that brought dramatic changes and led the two sides to modify their positions. This time the Greek Cypriot side supported a consociational unitary state as a solution, while the Turkish Cypriots called for a federation.

The 1977 Makarios-Denktas and 1979 Kyprianou-Denktas high level agreements, also known as the Summit Agreements, shaped the parameters of the future inter-communal negotiations. Hence, based on the 1977 and 1979 agreements, which were agreed upon by all sides and endorsed by the UN, the positions of the negotiating parties became clearer.

Several on and off inter-communal negotiations and the proximity talks conducted under the auspices of the UN during the 1980s paved the way to talks towards an overall framework agreement between Denktas and Vassiliou. The product of the Denktas-Vassiliou negotiations (1988-1992) was the UN Secretary General's famous Set of Ideas (1992) – which was in the form of an overall framework agreement.

Towards the mid-1990s, the Greek Cypriot application to the EU for full membership began to draw support from the EU member states, due mainly to the successful policies and maneuvers of the Greek governments in the EU. In spite of strong Turkish and Turkish Cypriot opposition, the EU in 1995 turned a deaf ear to the Turkish Cypriot arguments and decided to open accession negotiations with the Greek Cypriot government – on behalf of the whole island. After that there was practically no peace negotiation until the 1999 EU Helsinki Summit where Turkey was announced a candidate country changed the dynamics in the Cyprus equation. Here the idea was to solve the Cyprus problem before it joins the EU so that Turkey's own EU vocation could proceed without Cyprus being a stumbling block before it. Hence, the two sides in Cyprus were motivated to start the intercommunal talks in 2000 which culminated into the UN Comprehensive Settlement for Cyprus - known also as the "Annan Plan" in 2004.

The Annan Plan was put to simultaneous separate referenda on both sides of the island on 24 April 2004. Though the plan was accepted by 65% of the Turkish Cypriots in the North, it was voted down by 76% - a huge majority – of the Greek Cypriots in the South. Here, the Greek Cypriot leader Tassos Papadopoulos who advocated the NO vote for the plan believed that the (Greek Cypriot) Republic of Cyprus which become a member of the EU without the Turkish Cypriot "partner" would be in better

position to use the EU leverage and get a much better solution for the Greek Cypriots than what the Annan Plan offered. However, that was not the case since the Turkish side refused to budge the pressures, as well as because the EU has been reluctant to play a decisive role in the Cyprus conflict.

During his tenure Papadopoulos was not interested to negotiate while his counterpart, the Turkish Cypriot leader Mehmet Ali Talat was eager to engage in negotiations aiming for a comprehensive solution. The presidential election in the Greek Cypriot community in 2008 became a battleground between the Papadopoulos' NO camp and those who threaten that if negotiations are not pursued the island would be permanently divided. It was Demetris Christofias, the leader of the communist AKEL, who was elected. He placed his campaign on the premise that Cyprus is at the brink of a permanent division and that he was the leader to negotiate the reunification of the island with his counterpart and *comrade* Talat – who comes from a (once) socialist party.

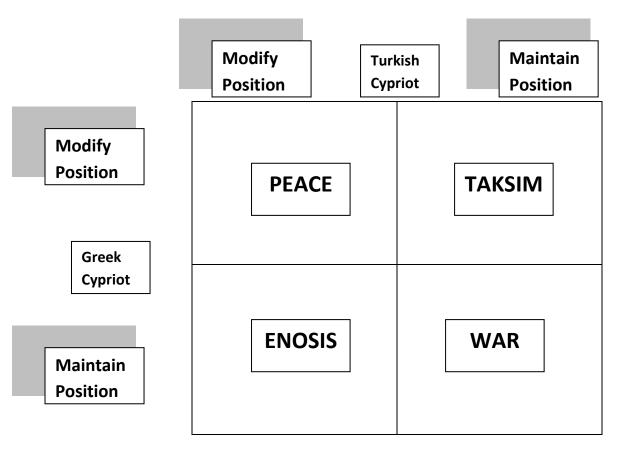
Talat and Christofias agreed in March 2008 that a number of working groups would be established on the substantive issues of the Cyprus conflict and prepare the ground for full fledged negotiations by the two leaders. While the working groups were preparing the ground the two leaders came together and issued two joint declarations on 23 May and 1 July 2008 where they stated that they agreed that the basis of the future solution of the Cyprus conflict would be creation of a federal state that is bi-zonal and bi-communal, with single international sovereignty and citizenship, comprising of two constituent states, a Turkish Cypriot State and a Greek Cypriot State having equal status. Based on these, the two leaders started full fledged negotiations on the topics of the working groups in September 2008. Since then the two leaders have met for negotiations more than 60 times – a true iterated Prisoner's Dilemma game!

4. Game Theory and Cyprus as a Prisoner's Dilemma

The first game theoretic attempt to explain the Cyprus conflict came from Malvern Lumsden (1973) in the Journal of Conflict Resolution. Lumsden (1973) had 134 Greek Cypriot and 51 Turkish Cypriot student teachers examine the Cyprus conflict and indicate their preferences based on four choices of outcome: peace, ENOSIS³, TAKSIM⁴, and war. He presented the Cyprus conflict as a 2 by 2 matrix as the following (Figure 4):

³ ENOSIS is the Greek policy which means union of the island with Greece.

⁴ TAKSIM was the Turkish policy which means partition of the island between Turkey and Greece.



The most important finding in Lumsden's study was that the Cyprus conflict in the early 1970s could be seen as a Prisoner's Dilemma game. In such a model, the conflicting sides did not see *war* as the worst outcome. In that regard, *peace* was a Pareto-optimal solution. This was a very successful explanation of the context in which the Cyprus conflict took place in the early 1970s since the two sides ended up in war in 1974.

However, Lumsden did not analyze either the important issues of the inter-communal negotiations or the negotiation process itself. Moreover, Lumsden's sample is not a good sample that can represent either the population in general or the policy makers in particular regarding the Cyprus conflict.⁶ However, as the first published game theoretical analysis of the Cyprus conflict, Lumsden's work deserves important attention.

Yeşilada (1997), Yeşilada and Hewitt (1998), Sözen (1999) and Yeşilada and Sözen (2002) also analyze the Cyprus conflict and the bargaining process by means of 2 by 2 games. The difference between these work and Lumsden's is that the former uses data gathered mainly from the public statements of the disputed sides, daily newspapers and from several interviews with the officials of the two communities, while Lumsden's data, as mentioned before, were collected strictly from a sample of

⁵ Source: Lumsden (1973: 10).

⁶ Lumsden's sample could be regarded as a fair sample in the early 1970s during which the nationalistic emotions were running high and there was very unified solidarity on the Cyprus conflict in both sides. However, today both communities are very democratic which tolerate more and more diverse voices, and have broader leadership compared to two-three decades ago. Hence, Lumsden's sample would not be a good sample that can represent either the population in general or the policy makers in particular in the present situation.

student teachers by means of interviews. In addition, Yeşilada (1997), Yeşilada and Hewitt (1998), Sözen (1999) and Yeşilada and Sözen (2002) analyze the bargaining (i.e., the inter-communal negotiation process) rather than the conflict itself as Lumsden does.

Inter-communal Negotiations in Game Theoretic Approach

In Figure 4, Lumsden (1973) gives an accurate game theoretical matrix of the Cyprus case before the 1974 war. It was a Prisoner's Dilemma where each actor's preference ordering was T>R>P>S. Here each side preferred its nationalist aspiration, TAKSIM and ENOSIS. Peace was only the second preference. Furthermore, each side was ready to go to war in order to prevent the other from actualizing its national aspiration.

After the 1974 war, the situation in Cyprus changed dramatically and the island was divided into two ethnically homogeneous parts. The intensified negotiations in the second half of the 1970s started to produce certain concepts, such as federalism, bi-zonality and bi-communality which became the parameters of a future resolution and the basis of further inter-communal negotiations.

Based on Table 1 where the official positions of the two conflicting sides are summarized on important issues, the strategic game matrix for the inter-communal negotiations during the post-1974 can be designed as in Figure 5.

Turkish Cypriot

issues of Negotiation	Greek Cypriot	Turkish Cypriot
	Position	Position
POLITICAL SYSTEM	A unitary state structure is preferred. A federation in which the Turkish Cypriot can have "autonomy" is offered. May accept a bi-communal, bi-zonal federation without the equality of the Turkish Cypriot community. However, enormous side payments are needed for the acceptance of a bi-zonal, bi- communal federation in which the two federated states will have political equality.	A bi-zonal, bi-communal "confederation" of "two sovereign states" is preferred. However, with substantial side payments, a bi-zonal, bi- communal federation with specific political equality for the Turkish Cypriot community may be accepted.
Federal powers	Strong federal (central) system.	Very weak confederal/federal (central) system.
State powers	Very weak and limited powers.	Very strong and extensive powers. Specifically, the states will be sovereign.
Sovereignty	Single sovereignty for the whole island (i.e. for both communities).	Separate sovereignty for each people/nation (community) based on the self-determination right of each community.

Table 1: Official Negotiation Positions of the Two Sides

Issues of Negotiation

Greek Cynriot

Representation	Greek Cypriot President, (maybe) Turkish Cypriot Vice-President (no rotational presidency). Ratio of Greek to Turkish Cypriots in council of ministers, federal legislature and institutions to be based on population ratio (80:20 Greek to Turkish Cypriot).	Rotational Presidency;more than 70:30 ratio Greek and Turkish Cypriot representation in (con)federal institutions.
GUARANTORSHIP	No need for a guarantee system. No unilateral intervention right for Turkey.	1960 Treaty of Guarantee to remain without any change. (unilateral intervention right for Turkey).
THREE FREEDOMS		
Freedom of movement	Absolute freedom.	Absolute freedom.
Freedom of settlement	Absolute freedom.	Freedom with restrictions (a quota to be imposed so the bi- zonality is respected)
Freedom of property ownership	Absolute freedom	Strong restrictions, and after a moratorium.
TERRITORIAL ADJUSTMENT	Greek Cypriot State having 80% of the land. May go down to around 75%.	Turkish Cypriot State to retain 29+% of the land.
MILITARY BUILDUP	Demilitarization of the island. A multinational force (maybe UN), and lightly armed police force of Cypriots maintaining order.	Turkey keeps a contingent on the island for the security of Turkish Cypriots.
DISPLACED PERSONS & PROPERTIES	All displaced persons have the right to return to their properties.	Restricted access to the displaced persons. Compensatory payments for the displaced persons and territorial adjustment to respect the bi- zonality.
SETTLERS/IMMIGRANTS	All Turkish settlers should go back to mainland Turkey.	All Turkish immigrants with TRNC citizenship should stay in Cyprus.
EU MEMBERSHIP	Strongly supports. (* The Greek Cypriot Republic of Cyprus became a member of the EU in 2004).	Supports membership only after a final solution, separate referenda for the two communities, and special relations of Cyprus with Turkey (i.e., Turkey having same rights as the other EU members in Cyprus).

Source: Data based on the interviews the author conducted in Nicosia, Ankara, Athens, Brussels and London during 1997-98 and updated as of 2010, and the daily news from the local media in Cyprus, Turkey, Greece, as well as from the international media.

Figure 5: The General Strategic Matrix of the Cyprus conflict during the inter-communal negotiations in post-1974

	Cooperate or Compromise C	Turkish Cypriot		Defect or Stand Firm D	
Cooperate or Compromise C	 A Negotiated UN-proposed federation A Negotiated Guarantee System based on 1960 Guarantee System modified with either UN or EU elements and tied to Turkey's EU membership A Negotiated Model: Freedom of Movement, Settlement, and Limited freedom to own Property T. Cypriots give up some territory in return for Constitutional Rights (T. Cypriots keep 25-29% of land) Some of the displaced persons return to their properties based on a negotiated agreement. 		 Confederation or Two Independent States 1960 Guarantee System Limited freedom of movement, and NO freedom of settlement and No freedom to own property T. Cypriots maintain the territory of the TRNC No displaced persons return to their properties. They are all financially compensated. All Immigrants/Settlers remain in Cyprus A large portion of the current Turkish troops remain in Cyprus 		
Greek	The rest are financially compensate - Based on a negotiated agreement Immigrants/Settlers remain in Cypr return to Turkey (with a compensat - A negotiated number of Turkish au troops remain in Cyprus (R ₁ , R ₂)	some of the us, others tion)		(S ₁ , T ₂)	
Cypriot Side	- Unitary State where the T. Cypriots are minority - Unrestricted Freedom of Movement, Settlement and Freedom to own Property - Territorial distribution on the basis of population ratio (20% - 80%) - All displaced persons return to their properties		Status quo: - Divided island: G. Cypriots not controlling the whole island; TRNC is not internationally recognized - (ambiguous situation where) G. Cypriots are under EU umbrella; Turkey guarantees TRNC's		
Defect or	- All or most of the Immigrants/ Set Turkey		defense and safety - Only freedom of movement; and NO freedom		
Stand Firm D	- All Turkish troops leave Cyprus		- Dispute buffer zo - All displ not prope - All Immi	nent or freedom to own property d territory and the presence of UN ne (Green Line) aced persons remain displaced and erly compensated igrants/Settlers remain in Cyprus, an	
	(T ₁ , S ₂)		- Cyprus r	ntinue to come to Cyprus remains militarized; always a y of an armed clash (P1, P2)	

Source: Data based on the interviews the author conducted in Nicosia, Ankara, Athens, Brussels and London during 1997-98 and updated as of 2010, and the daily news from the local media in Cyprus, Turkey, Greece, as well as from the international media.

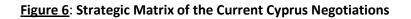
More than 40 years of inter-communal negotiations since 1968 passed in a conflictual setting. In this conflict the two sides have been playing an iterated Prisoner's Dilemma game where the preference ordering of the players have been T>R>P>S (Figures 1-2).

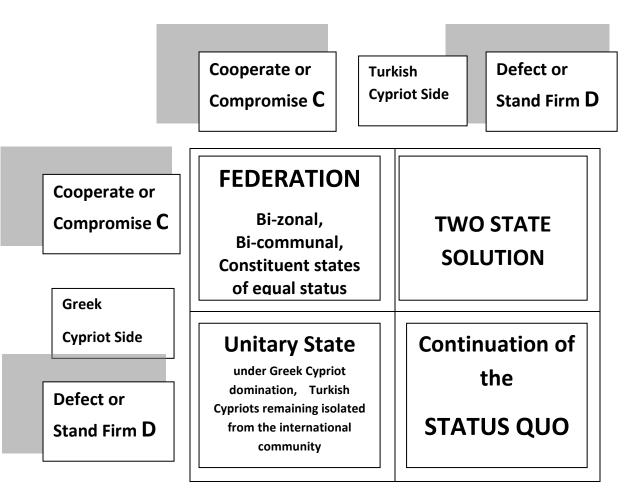
In this iterated game, the dominant strategy for both sides is defection or stand firm (not compromise or not cooperate). In this context, the (defect, defect) or (D_1, D_2) – the (P_1, P_2) cell in the game – represents a Nash equilibrium. This equilibrium is Pareto inferior to the (cooperate, cooperate) or (C_1, C_2) option – the (R_1, R_2) cell in the game. In other words, in a Prisoner's Dilemma conditions, each player's rationality dictates 'defection in order to win unilaterally' even though cooperation might be a conceivable option. Here, the role of the mediator is very important in helping the conflicting sides to achieve a (C_1, C_2) outcome by means of binding agreements and credible side payments.

5. The State of the Current Cyprus Negotiations

The current set of negotiations which started in 2008 reached to its second year where the two leaders, Talat and Christofias have met more than 60 times. In another words, they are locked into a truly iterated Prisoner's Dilemma game.

The following strategic matrix show (Figure 6) the possible outcomes of the current set of negotiations.





In this iterated game, the first move, that is, cooperation in the form of a good will gesture came from the Turkish Cypriot leader who announced after the failure of the 2004 referenda that he was ready to negotiate a comprehensive solution with his Greek Cypriot counterpart. Talat's gesture found a match in 2008 when Christofias came to power in the Greek Cypriot community following the presidential election in 2008. Since then, the two leaders have been following a TFT strategy with some occasional minor *defections* – mostly by the Greek Cypriot leader, who opposes to suffocating deadlines, mediation/arbitration by the third party (UN), more frequent/intensified negotiations as well as joint declarations of areas of convergence by the two leaders. However, these *defections* have been forgiven so far which made the continuation of the negotiations possible.

Here the possible outcomes are

(i) Continuation of the status quo: The status quo means that the Greek Cypriot side continues to be treated as the legitimate government of the whole island, though it has no effective control on the TRNC. Here, the Greek Cypriots' biggest concerns are their property in the TRNC; remaining of thousands of Turkish troops in Cyprus; and the changing demographics in Cyprus – that is, more Anatolians settling in the TRNC. The biggest concerns for the Turkish Cypriots in this outcome are the continuation of the isolations/embargoes on the Turkish Cypriots; lack of an international status; and Cyprus issue continuing to be a problem in Turkey's relations with the European Union.

- (ii) Unitary State: This is the outcome where the Turkish Cypriot side accepts all the demands of the Greek Cypriot side. In such an unlikely scenario, the Turkish Cypriots accept to be a minority in a Greek Cypriot dominated unitary state.
- (iii) Two State Solution: In this outcome, theoretically the Greek Cypriot side accepts all the demands of the Turkish Cypriots which in effect results in the two-state solution. Just like the unitary state scenario, it is quite unlikely that the Greek Cypriot side would ever recognize a sovereign Turkish Cypriot State in the foreseeable future.
- (iv) Federation: This is the outcome where the two sides give up on their respective dominant strategy of *defection* in which case both lose and adopt a cooperative strategy where both win. The result is a federation which would be bi-zonal with regard to territorial aspects and bi-communal with regard to constitutional aspects, as well as comprising of two Constituent states of equal status – a Greek Cypriot State and a Turkish Cypriot State (in line with the 23 May 2008 Joint Declaration of the Two Leaders).

It is clear that neither the *unitary state* (ii) nor the *two state solution* (iii) scenarios are likely outcomes of a negotiated solution based on the current negotiations. The current negotiations are carried out on the basis of the parameters that the two sides agreed upon, such as 1977-1979 High level Agreements and the Joint Declarations of the Two Leaders dated 23 May and 1 July 2008. According to these agreed upon parameters, the solution of the Cyprus problem will be a *federation* (iV) with single sovereignty and citizenship which will be bi-zonal with regard to territorial aspects, bi-communal with regard to constitutional aspects, as well as comprising of two constituent states of equal status - a Greek Cypriot State and a Turkish Cypriot State. This is a likely outcome if the two sides could be kept in the cooperative mode based on TFT strategy that they have been engaged since 2008.

However, there is always the possibility of one side *defecting* – leaving the negotiating table or saying NO to an agreement in the referenda! Does that mean that the two sides return to the status quo (i)? Then the question is, *is the current status quo (i) sustainable?*

The international community – through many UN Security Council resolutions and reports of the Secretary Generals made it clear that the status quo is not acceptable. However, was not that the case in 2004, too, when the UN Comprehensive Settlement was voted down by the majority of the Greek Cypriots in the referenda? Then, if that's the case, what needs to be done to get the two negotiating sides to end up in the fourth – that is (iv) *federation* – scenario?

6. Conclusion and Recommendations for the UN

As stated earlier, a skillful mediator can induce the players towards cooperation, by means of utilizing binding agreements and/or side payments. The mediator can get the conflicting sides to value the future differently. For example, a skilled mediator can increase the value of the discount factor for an iterated game, so that the conflicting parties are motivated not to quit the negotiation process. Hence, in case of the Cyprus negotiations, the UN – having the *mission of good offices* – can do several things that can keep the two sides in a cooperating TFT strategy:

1. High level UN officials should make frequent statements encouraging the two leaders; reminding them of their responsibilities and encouraging them to take bolder actions. Moreover, these statements should make it clear that the international community has very high expectations on the two leaders.

- 2. There should be a clear understanding that the price of leaving the negotiation table is very high (that is, if punishment for defection is big, then cooperation becomes the choice). The UN should make occasional statements that it has been investing a lot on the Cyprus conflict and that there are other conflict-zones which need UN attention and resources.
- 3. The UN should find ways of creating and offering large side-payments to the two negotiating sides (the UN can try to change the payoffs of the game, so that through large side payments the payoff structure of the game can be altered so that it is no longer a Prisoner's Dilemma game). For example, a "donors conference" where funds can be raised to be used in helping settle down the property issues in the post-solution Cyprus can be a good incentive for the two sides to make mutual compromises.
- 4. The UN should commission research to investigate into win-win sets in several sectors in case of the *federation* scenario. Such research results should be disseminated to the general public in a simple and comprehensible mode.
- 5. The UN should try to induce the two sides to make binding agreements that should pave the way to a comprehensive solution. In other words, the UN should try to keep the two sides committed to the areas of convergence reached so far, so that even in case of defection, they will not start from the start.
- 6. The UN should remind the two sides that in case the negotiations fail, it will make public the areas of convergence between the two sides as well as the positions of the two sides on the areas of clash based on notes taken so far so that it would be clear as to which side stepped out of the agreed upon parameters.
- 7. It should be made clear that rejecting a UN-endorsed comprehensive settlement has a big cost for the side who rejects it. In case a comprehensive settlement emerges to be put to simultaneous, separate referenda similar to 2004 then, the UN should remind the two communities that voting no to a plan that was agreed by two leaders will have serious consequences that make the continuation of the status quo impossible.
- 8. Finally, the UN should remind the two sides that the UNFICYP cannot stay indefinitely on the island since there are other conflict-torn regions which are in urgent need of peace-keeping troops. It should be made clear that the failure of the current negotiations would probably lead to the withdrawal of the UNFICYP to be used elsewhere where it is needed more.

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