Journal of Social & Organizational Matters
Vol 3 No 3 (2024): 52-74

The Prisoner's versus Pardoner's Dilemmas: A Juxtaposition of Two Strategic Decision-Game Theoretic Approaches in Social Sciences

Saad Malook*[1]

[1]*Assistant Professor, Department of Philosophy, University of the Punjab, Lahore-54590, Punjab, Pakistan.

Corresponding author: saad.phil@pu.edu.pk

ORCID: https://orcid.org/my-orcid?orcid=0009-0000-3289-9346

Keywords: *Game Theory, Prisoner's Dilemma, Pardoner's Dilemma, Instrumental Rationality, Decision Theory*

DOI No: https://doi.org/10.56976/jsom.v3i3.21

This article introduces a strategic decision-game theoretic approach, the Pardoner's Dilemma, and juxtaposes it with the Prisoner's Dilemma. Game theory has emerged as a significant approach in the twentieth century for explaining strategic decision-making in numerous arenas, including economics, business, politics, ethics, international relations, biology, law, and war studies. 'Game theory' explains how and why players/actors/agents cooperate or conflict to procure their self-interests in a social world. Life is a game, and human, corporate, and artificial intelligent agents are players who play different games to maximise utility or minimise disutility. The Prisoner's Dilemma is a promising game-theoretic approach that explains strategic decision-making in zero-sum and non-zero-sum games. 'Strategic decision-making' means that the outcome does not depend upon the actions of a player but upon all players. There are numerous essential game strategies, including tossing, negotiation, bargaining, balloting, competition, chance, power, and arbitration. Although the Prisoner's Dilemma is a good game-theoretic approach, it does not allow players to use the key game strategies. In contrast, Pardoner's Dilemma is a game theoretic approach that not only explains zero-sum and non-zero-sum games but also allows the players to use different game strategies, such as negotiation, bargaining, tossing, chance, balloting, competition, arbitration, and power. The article develops and defends the Pardoner's Dilemma in the game-theoretic approach as an alternative to the Prisoner's Dilemma. The article claims that the Pardoner's Dilemma is a more promising approach than the Prisoner's Dilemma in the decision-game theoretic framework. By introducing the Pardoner's Dilemma, the article enhances the scope of decision/game theory in social sciences.

1. Introduction

Whenever a human agent interacts with others, a game is being played (Binmore, 2007). The term 'game' refers to a conflicting or cooperative situation in which players make individual or collective decisions to maximise their individual or the common good. The key idea of game theory holds that human beings are rational agents who maximise their self-interests. The genesis of game theory goes back to a seventeenth-century English political philosopher, Thomas Hobbes's notion of the state of nature in which people only protect their own self-interests by means of conflict or cooperation. By cooperating through a social contract, people form a state as an arbitrator to protect their rights (Hobbes, 2017). The account of rationality is instrumental rather than normative, which promotes self-interest rather than the common interest. Hence, game theory is an artificial framework that explains human conflicts and examines the idealised situations of games among rational players (Poundstone, 2013). In strategic decision-making, the outcome depends upon chance and the strategic abilities of the players involved in a game (Neumann & Morgenstern, 1974). Instead, in 'non-strategic decision-making,' players' actions do not affect other players' outcomes. Decision theorists explain under what conditions it is possible to have a fair distribution, exchange, or bargaining between two or more players, actors, agents, groups, organisations, or institutions. I use the expression 'players' for human, corporate, or artificial intelligent agents who make rational decisions to acquire their individual or common interests. The players of the grand game of life make rational actions to win the hearts of people in politics, sports, and arts, develop business estates, and "build nations and empires, create customs and institutions, invent symbols and constitutions, make war, revolutions, and peace" (Ealau, 1993, p. 6). Conflict or cooperation takes place among players in terms of individuals, agents, parties, or institutions.

Life is a game. In a broader sense, from the very beginning of human life, out of the mating contest among sperms with an egg, and then the entire course of life, a continuous contest between poverty and prosperity, disease and health, and, in general, life and death, involve a series of games. Human players play different kinds of games in their lives. For instance, Abelard and Heloise, Romeo and Juliet, Werther and Charlotte played the games of love. Moreover, Adolf Hitler and Josef Stalin, and Kruschev and Kennedy played different strategic games to acquire their political ends (Binmore, 2007). In a social life, decisions do matter: right decisions give people success, while wrong decisions lead to

failures. The key principle of game theory states that one is free to choose but not free from the consequences of the choice. In social life, everyone makes decisions based on information in hand and past experience in related fields, such as education, business, marriage, religion, politics, economics, law, science, and ethics, and bear their good or bad consequences. Players make strategic actions to pass the examination, get on trains, acquire jobs, defeat diseases for better health, fight poverty for prosperity, combat violence for peace, and, in short, acquire a good living. At any moment, one may ask a question to oneself: What if one had not made the decision, the course of life would have been different. The strategic decision-making brings about social change in the world. Due to strategic decision-making, the social reality is evolving; every moment of life is unique. So, decisions determine the game of life and its failures and successes in the social world.

The Prisoner's Dilemma is considered to be a promising game-theoretic approach to explain the strategic action of players in a social arena. The *Pardoner's Dilemma* is another game-theoretic approach that explains the strategic actions of rational players. The Pardoner's Dilemma is a better approach than the Prisoner's Dilemma because it contains different game strategies, including communication, tossing, negotiation, compromise, chance, or arbitration, which helps resolve conflicts among human agents or institutional agents for the common good. The Pardoner's Dilemma shows that if players cooperate, they will achieve a common good, such as their survival, peaceful co-existence, and a good life.

2. Game Theory and Its Contents

Game theory as a decision-theoretic framework is an interdisciplinary approach that explains players' rational actions. The development of the game-theoretic approach in the social sciences is as significant as the development of Albert Einstein's theory of relativity in the natural sciences. In other words, game theory brings about a Copernican revolution for explaining rational action in social sciences in the twentieth century. John von Neumann and Oskar Morgenstern are the founders of the game theory. In their collaborated classic work, *Theory of Games and Economic Behaviour* (1944), Neumann and Morgenstern provided the foundation for the game-theoretic research program. John F. Nash (1928-2015), an American mathematician, shared a Nobel Prize in 1994 with John Harsanyi and Reinhard Selten for their contributions to the development of game theory. Nash's substantial ideas, known as the Nash Equilibrium and the Nash Bargaining

Solution, are significant in understanding rational action in social sciences using the game theoretic approach. In his classic work, *Essays on Game Theory* (1996), Nash theorises the bargaining problem between two persons. Nash states that bargainers are rational beings who should agree to expect rational gains through fair bargaining, which satisfies each of them with what they expect to acquire (Nash, 1996). The best solution to the bargaining problem is known as Nash Equilibrium.

Neumann and Morgenstern hold that game theory is an 'instrument' that explains rational human behaviour (Neumann & Morgenstern, 1974). Game theory as an instrument or a device helps explain how and why rational players act either to cooperate or conflict to acquire their interests. Rational players decide in such a way that they believe that their decisions will acquire the maximum utility. In "Game Theory Defined: What it Is and is Not," Anatol Rapoport holds that game theory explains (or prescribes) how participants make rational decisions in a situation where there is a conflict of interests (Rapoport, 1992). Is cooperation or conflict vital in game theory? Cooperation is the central strategy of non-zero-sum games, while conflict is the central strategy of zero-sum games. Interestingly, Thomas C. Schelling's significant work, *The Strategy of Conflict*, states that conflict is considered to be a kind of contest in which players strive to win (Schelling, 1980). Rational players love to win and hate to lose in all games of life.

2.1 Instrumental versus Normative Rationality

Game theorists believe that players are rational agents. This is a particular kind of rationality that works in game theory, and it is instrumental rationality. In contrast, there exists an account of rationality known as normative rationality. This normative rationality provides norms as standards for judging good and bad, right and wrong, and just or unjust. Yet, instrumental rationality is central to game theory. The distinction between these two kinds of rationality is significant to understanding how strategic collective actions affect ethical and political actions. For instance, empirically informed scholars often investigate individual behaviour when explaining social phenomena, such as voting behaviour, consumer choice, and occupational choice (Coleman 1990). The problems in understanding social choices appear when aggregating the interests or preferences in society. These social choices are forms of rational behaviour in terms of being end-orientated in a consistent way (Harsanyi, 1977). Thus, an instrumentally rational agent adopts the best course of action for maximising his or her interest.

An action or a decision is rational only if it maximises the actor's expected utility (Wooldridge, 2000). This means that instrumental rationality acts as a means to players' ends. In contrast, 'normative rationality' means that an action or a decision is rational if and only if it maximises the common good. 'Normative rationality' aims at deontological ends, like promise-keeping, even if promise-keeping does not maximise the common good. Relatedly, Russell Hardin juxtaposes two senses of rationality: narrow rationality and wider rationality. By 'narrow rationality,' Hardin means that an action is rational if an actor is "efficient in securing one's own self-interest" (Hardin, 1982, p. 10). This self-interest can be individual-centred or group-centred. Amartya Sen uses the expression "rational fools" for agents whose actions achieve only narrow or instrumental rationality (Sen, 1977; Sen, 2009). So, instrumental rationality and narrow rationality are consistent. By 'wider' rationality, Hardin means that an action is rational if an actor considers moral or altruistic interests for the common good (Hardin, 1982). This account of rationality has a universal import. Brian Barry identifies wider rationality with 'social virtue' that requires a rational agent to be a sensible, sane, cooperative, and open-minded person (Barry, 1987). Hardin's and Barry's notions of wider rationality are consistent with normative rationality, which considers the common good or the interest of the entire humanity. For instance, members of the Sierra Club hold that the protection of the environment is a common good because it benefits all members of humanity (Hardin, 1982). Thus, game theorists use instrumental rationality to promote the self-interest of players or their groups.

2.2 The Strategic versus Non-Strategic Decision-Making

According to Schelling, the term 'strategy' refers to "the best course of action for each player depends on what the other players do" (Schelling, 1980, p. 3). In strategic rational conduct, one's action will affect the outcomes for other actors. In non-strategic conduct, the outcome is not the result of collective actions. According to Neumann and Morgenstern, strategic decision-making means, "If two or more persons exchange goods with each other, the result for each one will depend not merely on his actions but on those of others as well. Thus, each participant attempts to maximise a function of which he does not control all variables" (Neumann & Morgenstern, 1974, 11). A strategic action influences other players' choices by working on his / her expectations of the course of action (Schelling, 1980). So, the outcome of a strategic action depends upon mutual action. The idea that the outcome depends upon the actions of others is the key notion in

strategic decision-making. Instead, if one's actions do not affect the outcome of others and the other way around, the decision-making is non-strategic.

By using strategic decision-making, game theory has revolutionised social explanation that focuses on the element of chance. An explanation of non-strategic decision-making does not consider the matter of chance in terms of the influence of others' actions on the outcome. In religious explanation, the element of chance was considered the Divine's will or the Divine's intervention: if one succeeds in getting something, it is due to the Divine's will as a reward, and if one fails to acquire something, it is because of the Devine's wrath as a punishment. A religious explanation does not accept the centrality of human agency to underpin social phenomena. Thus, game theory, using strategic decision-making, provides a rational explanation of how the reign of self-interest governs the social world.

2.3 The Natural, Corporate, and Artificial Intelligence Agency

The distinction between three kinds of agents, human, corporate, and artificial intelligence, is important because these agents play a significant role in bringing about social change in the world. The question of what is to be a natural agent can be explained in different ways. A human agent is a natural agent. An agent is human if it contains particular human potentials, such as rationality and creativity, and if it is the progeny of a mother, or in other words, if the agent is biologically human.

In contrast, a corporate agent is the product of laws. The birth of the corporate agency is a modern phenomenon. To explain the idea of corporate agency, James Coleman's distinction between two kinds of persons is helpful. In *Power and the Structure of Society*, Coleman states that the law recognizes both physical persons and "juristic" persons. A physical person is a natural person, while a juristic person is a corporate person. A corporate person can be constituted by corporations of different forms, such as churches, clubs, trade associations, labour unions, professional associations, towns, and others (Coleman, 1977). Hence, natural persons are not the product of laws. Corporate persons are born of legislative bodies (Coleman, 1977). The legislative bodies create rules and regulations that constitute corporate persons. Coleman draws three central features of corporate persons. First, the life-span of a corporate person is not fixed. Some corporate persons have life in terms of centuries, for instance, a state. Second, a corporate person does not have a corpse, like a natural person, and it cannot be punished physically. For

instance, a judge cannot grant a death sentence to a corporate person. Third, corporate actors do not have the capability of acting themselves, they rely on the actions of natural persons (Coleman, 1977). For instance, the United Nations (UN), International Monetary Fund (IMF), universities, hospitals, and states are a few corporate persons that depend upon natural persons to perform their functions.

Coleman suggests that there is a need to look at "the relation between interests of corporate actors and those of natural persons who stand in various relations to those corporate actors" in society (Coleman, 1977, p. 15). He argues, "the power held by corporate bodies (whether business corporations, trade unions, government bodies, or still another form) is in the hand of no person but resides in the corporate actor itself" (Coleman, 1977, p. 37). A corporate person makes decisions, strategies, and actions to acquire its interests. Coleman's account of the corporate actor, if states are corporate actors, their strategies of conflict or cooperation cause social change in the world. If each state adopts the strategy of conflict, there is the possibility of war among them. In the games of wars, there is perhaps no possibility of positive social change at a large scale in the world. In contrast, the strategy of cooperation leads to peaceful coexistence. In decision-theoretic science, different games, such as zero-sum and non-zero-sum games, explain strategic rational conduct.

Like natural and corporate agencies, artificial intelligence agency has recently emerged in the world. Artificial intelligence agents are the products of machines. These agents, like the corporate agents, may have more life than natural agents. In the future, artificial intelligence agency will be one of the major players in zero-sum and non-zero-sum games. This agency has a lot of potential in education, medical science, security studies, arts, and ethics. The artificial intelligence agency would have benign and malign consequences on human life (Floridi, 2023).

2.4 Two Kinds of Games: Zero-Sum versus Non-Zero-Sum Games

The distinction between zero-sum games and non-zero-sum games is essential to determine whether players adopt the strategy of conflict or cooperation. In the simplest form, a zero-sum game involves two or more players in which one wins and the other loses. For instance, playing a duel, fighting a war, and cricket, poker, and chess are zero-sum games (Hardin, 1995). In 'non-zero sum' games, individuals cooperate to meet their individual or mutual interests. For example, giving way on the road is a non-zero-sum

game. A successful married life is a non-zero-sum game in which happiness depends upon the strategy of compromise between the husband and the wife. In the game of marriage, if the husband and the wife acquire personal interests rather than mutual interests, divorce is inevitable.

A strategic game is a zero-sum game theoretic situation in which players prefer conflict over cooperation because they assume that they can acquire more for themselves by doing so. While in a non-zero-sum game, players always cooperate with one another. By acting in this way, people attain mutual good. For example, road rules need cooperation for driving irrespective of the convention of driving on the left or right-hand side of the road. Pakistan and New Zealand have adopted the left-hand driving convention, while France and the United States of America have adopted a right-hand driving convention.

According to game theory, there are two conditions under which people cooperate or conflict. First, one decides to conflict in a situation where one guesses that one can achieve more by conflict than by cooperation with others. In his work, *The Logic of Collective Action*, Mancur Olson argues that one cooperates if one realises that it would benefit, while one refuses to cooperate if one realises that it would get more advantage by conflict (Olson, 1965). Olson's thesis states that self-interest guides players on whether they ought to cooperate or conflict with other players. This anticipation of getting more from non-cooperation than cooperation is primarily based on one's information in hand and past experience in strategic decision-making. The strategy of conflict prefers competition to other forms of conflict resolution. The second condition under which people cooperate or conflict occurs when one decides to cooperate in a situation where one realizes that one can get more disadvantage by conflict because one's competitor might be successful in the competition, and if this idea prevails for both parties, they will agree to cooperate (Goodin, 1976). This condition occurs when a person understands that cooperation enables one to get benefits that others get as well (Hardin, 1995). If players adopt the strategy of cooperation, each player gets benefits. This kind of game is known as a non-zero-sum game.

3. The Prisoner's Dilemma

In the contemporary game-theoretic framework, the Prisoner's Dilemma is considered the best approach for explaining social interaction in social sciences. As

explained above, the Prisoner's dilemma contains two kinds of games: zero-sum and non-zero-sum games. In law, the Prisoner's Dilemma is used as a case of state witness. The Prisoner's Dilemma brought about a paradigm shift in social sciences from an irrational explanation to a rational explanation of social action.

The term 'dilemma' means two sides. The game-theoretic framework is concerned with a conflict situation where one decides an act while others are faced with the same decision choice. The outcome depends upon their collective decision-making (Poundstone, 1992). Merrill Flood and Melvin Dresher formulated a game in 1950 called the 'Prisoner's Dilemma' by Albert W. Tucker (Poundstone, 1992). Tucker wrote to Dresher about the prisoner's dilemma in a letter that explained: Two people have been indicted with a joint violation of law and are kept in different cells by police. Everyone is asked:

1. "If one individual confesses and the other does not, the former will be given a reward… and the latter will be fined…

2. If both confess, each will be fined…

3. If neither confesses, both will go clear" (Poundstone, 1992, 119-20).

Tucker's dilemma has the following form: The Police arrest two persons, let us name them James and William, at a crime scene and keep them in isolated cells, and they are not allowed to exchange information with each other. The police cannot acquire sufficient evidence to convict them. In this situation, the police want to investigate the matter logically and decide to make a deal with the alleged prisoners. The police tell the prisoners individually that if one confesses the crime and acts as a state witness against the other, he would be freed, and the other person would be punished for 10 years. Yet, if both individuals confess, they would face a 5-year sentence. If no one confesses, both would be confined for 1 year (Poundstone, 1992).

Table No 1: The Prisoner's Dilemma

Matrix No. 1: The Prisoner's Dilemma			
		William	
		Silent	Confess
James	Silent	1 Year for James 1 Year for William	10 Years for James 0 Years for William
	Confess	0 Year for James 10 Years for William	5 Year for James 5 Years for William

This matrix shows a dilemmatic situation that offers different options to the players. They may remain silent or confess complying with their self-interests. It is assumed that everyone wants the best possible outcome for themselves, but the outcome for each person depends upon the decision of the other individual. If one remains silent and the other confesses, the former would be at risk and if both remain silent, both could face less harm. The Prisoner's Dilemma, as a game theory, describes the strategic behaviour of players in game-theoretic situation to maximise their personal utilities. There is one option with equal outcomes for each person in the form of both remaining silent and both getting a 1-year sentence. With this choice, they would avoid a 10-year sentence that is far more than 1-year sentence. This best possibility is known as the Nash equilibrium.

When explaining different possible options, I explain an approach, the Pardoner's Dilemma, that perhaps better explains social phenomena than a Prisoner's Dilemma in different game-theoretic situations. In the game-theoretic literature, the prisoner's dilemma does not employ the key game strategies to resolve the conflicts among people. To address the issue, this article introduces and defends the Pardoner's Dilemma, which contains different game-theoretic strategies.

4. The Pardoner's Dilemma

In the decision-game theoretic framework, I posit Pardoner's Dilemma to explain the decision problem of cooperation or conflict for explaining the individual good, the common good, or the common bad. The Pardoner's Dilemma is based on Geoffrey Chaucer's classic work, *The Canterbury Tales.* Like the Prisoner's Dilemma, the Pardoner's Dilemma includes the possibilities of zero-sum and non-zero-sum games. In addition, Pardoner's Dilemma provides the options to use several game theoretic strategies, including collaboration, conflict, tossing, arbitration, coercion, chance,

distribution, and communication. However, the Prisoner's Dilemma does not use such strategies.

The standard version of the Pardoner's Dilemma comprises three Flemish players, Charles, François, and Hubert, who are best friends and take an oath to help each other in kith and kin. They discover a treasure trove of gold coins by chance in a woodland. Let us determine the monetary value of the treasure trove is 12 million florins. They develop a common mind of equal distributions of gold among them. It is the morning when they discover the treasure trove, and they make a decision altogether that they will carry their individual shares of the gold in the night to their homes so that society would not understand them as robbers. At midday, they are hungry, and they want to eat something. They draw straws to determine who from a nearby town shall bring food and drinks for them. It is François who will go to the town to get lunch and drinks. When François leaves for the town, Charles and Hubert, the caretaker of the treasure trove, have a conversation with each other, and out of self-interest, they decide to kill François so that they can obtain more gold by dividing it into two rather than three parts. Charles and Hubert both want to get 6 million florins each. On the other hand, François makes up his mind to grab the entire treasure trove for himself. He alone wants 12 million florins. To acquire the entire treasure trove, he decides to kill both Charles and Hubert. He gets poison and puts it into two out of the three bottles containing drinks. As soon as François comes back to the hiding place in the forest, Charles and Hubert, according to their mutual decision, attack François with a dagger and kill him. Subsequently, Charles and Hubert eat the food. By chance, Charles and Hubert drink from the poisoned bottle. Like François, both Charles and Hubert also get death (Chaucer, 1958, p. 262-74).

The Pardoner's Dilemma contains various possibilities for three rational players, Charles, Hubert, and François, who could adopt strategies of collaboration or conflict to acquire either their personal good, the common good, or the common bad. Let us look into different possibilities.

Table No 2: The Pardoner's Dilemma

Matrix No. 2: The Pardoner's Dilemma			
Charles, François, Hubert			
			CONFLICT
Charles François Hubert	C O O P E R A T I O N	1	Charles = f 0 M François = f 0 M Hubert = f 0 M
		2	Charles = f 0 M François = f 0 M Hubert = f 12 M
		3	Charles = f 6 M François = f 6 M Hubert = f 0 M
		4	Charles = f 0 M François = f 12 M Hubert = f 0 M
		5	Charles = f 8 M François = f 0 M Hubert = f 4 M
		6	Charles = f 12 M François = f 0 M Hubert = f 0 M
		7	Charles = f 6 M François = f 0 M Hubert = f 6 M
		8	Charles = f 0 M François = f 6 M Hubert = f 6 M
		9	Charles = f 4 M François = f 4 M Hubert = f 4 M

The matrix shows the rational actions of three Flemish players in the Pardoner's Dilemma. The matrix explains the nine possibilities:

1. The standard version of Pardoner's Dilemma, Charles, Hubert, and François adopted the strategy of conflict and acted rationally, ultimately acquiring the common

bad. All players are killed by one another. The Pardoner's actors are all responsible for this outcome. This is the worst case of strategic decision-making. The case no. 1 of the matrix shows that each member gets 0 florins. In real life, actors who make this choice have no possibility of the common good, such as financial success, human development, peace, or human survival. The standard version of Pardoner's Dilemma shows that if players do not take care of the rights of one another, this world would not be different from Thomas Hobbes's state of nature in which the lives of individuals are "solitary, poor, nasty, brutish, and short" (Hobbes, 1998, p. 84). Let us call this standard version the tragedy of selfishness.

2. Assume François, by adopting the strategy of collaboration, did not put poison into any drinks. Charles and Hubert, who adopted the strategy of defecting, decided to kill François on his return from the town to the hiding place. As soon as he came back, Charles and Hubert killed François. Now, they shall have the possibility of a greater share, which they would divide into two rather than three parts. Hubert and Charles get into a fight with each other, and Hubert kills Charles. Hubert gets the whole treasure. The case no. 2 of the matrix shows that Hubert gets 12 million florins. This means that if one person chooses to cooperate and the others decide to conflict with that person, the person who decides to cooperate probably suffers while the non-cooperators benefit.

3. Suppose Charles adopts the strategy of collaboration and Hubert adopts the strategy of conflict. Hubert reveals his intention to kill François with Charles, but Charles disagrees with Hubert. When François returns, Charles shares Hubert's bad intention with François. François has already put poison in two bottles of drink. François presents contaminated water to Hubert and clean water to Charles so that he can pay back his moral behaviour. Hubert is killed. Now, François and Charles divided the treasure trove into two parts. The case no. 3 in the matrix shows that François and Charles each acquired 6 million florins.

4. If Hubert adopts the strategy of collaboration and Charles adopts the strategy of conflict. Charles does not share his intention with Hubert. François has decided to poison Hubert and Charles. On his return, Charles shares his idea with François that they could get more shares by killing Hubert. François agrees with Charles and they kill Hubert. Charles has the option to share the treasure with François or get the whole treasure by killing him. Charles is not powerful enough to kill François. If Charles is powerful enough, it would be rational for François to kill him once he realises that François is

already planning to poison him. After the lunch, François gives a poisonous drink to Charles, and Charles dies. François gets the whole treasure. The case no. 4 in the matrix shows that François alone gets 12 million florins.

5. What if Charles adopts the strategy of the conflict and decides to kill François and shares this with Hubert so that they could each get a bigger share, and Hubert agreed with Charles. This time, François adopts the strategy of collaboration. As soon as François returns from the town, Hubert and Charles kill François. Now, Charles forces Hubert to take François's part because he got the idea to kill him. Hubert unwillingly accepted Charles's decision. The case no. 5 in the matrix shows that Charles alone gets 8 million florins and Hubert gets 4 million florins.

6. If François adopts the strategy of collaboration, do not put poison into any drinks. Charles and Hubert, who adopted the strategy of defecting, decided to kill François on his return from the town to the hiding place. On his return, Charles and Hubert killed François. Now, they shall have the possibility of a greater share, which they would divide into two rather than three parts. Hubert and Charles get into a fight with each other, and Charles kills Hubert. Charles gets the whole treasure trove. The case no. 6 in the matrix shows that Charles gets 12 million florins.

7. Assume Charles and Hubert decided to kill François on his return from the town. As François came back with food and drink from the town, Charles and Hubert killed François. By chance, they drank the untainted bottle. Hubert and Charles drew the straw and fairly distributed the gold into two parts. In this case, each gets 6 million florins. In this scenario, game strategies of chance and tossing are used. Yet, there is no such possibility in Prisoner's Dilemma.

8. What if Charles adopts the strategy of the conflict and decides to kill François and shares this with Hubert so that they could each get a bigger share, but Hubert disagrees with Charles. This time, François adopts the strategy of collaboration. As soon as François returns from the town, Hubert shares the ill intention of Charles with François. Now, François gave poisonous drink to Charles and he died. François and Hubert divide the gold into two parts. Case no. 8 in the matrix shows that François and Hubert each get 6 million florins. In this case, François and Hubert used the strategy of negotiation. The Prisoner's Dilemma does not allow to use of this strategy by the players.

9. Pardoner's players talk to one another and count the advantages of fair distribution. They can reach a decision where the amount of their share does not matter, what matters is peaceful co-existence, fairness, and reverence for other's rights. If they fight, and one kills the second, and the third may kill the second, how can they get peace? Thus, Hubert Charles and François reach a common mind of fair distribution through a long discourse with each other. They then divide the gold equally between each other. In this case, each player gets 4 million florins. This case resembles John Rawls's idea of the original position that developed in his significant work, *A Theory of Justice*. In the original position, the actors negotiate with each other to reach an agreement under the ethics of fairness (Rawls, 1971). In the game-theoretic framework, this agreement is also known as Nash equilibrium. Let us call this position the reward of fairplay.

5. The Divergent Game Strategies for Conflict Resolution

There are several strategies for resolving conflicts in a social world. Different strategies can be applied to resolve different conflicts, such as disarmament, deterrence, limited war, arbitration, and negotiation. In his influential work, *Political Argument*, Brian Barry charted a list of social decision processes to resolve conflicts in different situations. Sometimes, one method works effectively, but often, different approaches are useful for resolving conflicts between people, groups, institutions, or states. Explaining different strategies for conflict resolution is significant for three reasons: First, it would help understand if any strategy of conflict resolution is consistent with an approach to reaching agreements among states for acquiring the common good, such as a clean environment and global peace. Second, it would help understand the scope of the prisoner's dilemma, which is regarded as the best game-theoretic approach for explaining the interactive behaviour of natural, corporate, or artificial intelligent players. Third, it would help understand the scope of the Pardoner's Dilemma in game-decision theoretic sciences.

5.1 Coercion

In conflict resolution, coercion is the exercise of force to make a settlement between the actors or parties. There are two situations in which this strategy can be used. First, an arbitrator may force the actors or parties to accept the proposed decision. Second, in absence of the arbitrator, actors themselves adopt the strategy of force, in which case the decision of the most powerful is accepted. Following this strategy requires the most

powerful party to believe it is acceptable to use coercion to enforce one's ideas, policies or judgements on others. The strategy of coercion hinders dialogue or mutual discourse among actors or parties. Karl Popper, a twentieth century Austrian-British philosopher, narrated a situation where he encountered an agent of the National Socialist Party. Popper started giving reasons on a particular point, however, the National Socialist Party agent forcefully declared: "What, you want to argue? I don't argue; I shoot" (Popper, 1994, p. xiii). This implies that violence and reason are contrary. Barry rightly states that combat or violent competition enables one party to force the other party to surrender due to caution, fighting, or the imposition of financial sanctions. Consequently, the losing party must accept the conditions of the dominant party (Barry, 1990). However, sometimes, states still use such strategies when dealing with criminals who have either legitimate or illegitimate goals. States also do it against other states, such as Russia recently attempting to coerce Ukraine. This is the least successful form of settlement of conflicts between parties because it leads to violence. Coercion does not resolve the conflict forever. The strategy of coercion is not used in the prisoner's dilemma. However, the strategy of coercion has scope in the Pardoner's Dilemma. If three players elect an arbitrator, he may resolve the matter of distribution of gold by enforcing his authority. In the absence of arbitration, each may use one's force, and the result is the partial or the common bad.

5.2 Bargaining

Bargaining is another strategy of conflict resolution in which actors compromise to resolve conflicts. When actors change their demands during bargaining, they change their minds to reach a position that it would be reasonable for both parties to accept. Both sides are ready to compromise to settle the problem, and they aim to reach an equilibrium point or optimality. Cooperation makes bargaining successful, while defection impedes it. 'Defection' refers to non-cooperative behaviour. Barry states that the successful process of bargaining demands the change of the positions of the bargainers until an agreement is reached between them. However, in the absence of any agreement, at least one bargainer would consider, "it would make the other worse off than it was at the start unless it accepts certain terms" (Barry, 1990, p. 86). It is worth mentioning that communication is a significant part of bargaining but not a necessary one. As a strategy for settling conflicts, bargaining is not used in prisoner's dilemma because the prisoners/players are not allowed to communicate with each other. Yet, the Pardoner's Dilemma has the scope to use the bargaining strategy to settle disputes.

5.3 Discourse

Discourse is normally a decent approach for agreements. In bargaining, discourse plays a significant role in reaching agreements, but it is based on the interest of players. The strategy of discourse refers to sharing thoughts as part of converging on a mutual agreement. Barry states that discussion on principles could be practical to settle disputes in the absence of any type of coercion or manipulation (Barry, 1990). Stakeholders make a dialogue for the interests of both parties to develop an agreement. This dialogue would be on the procedure, policy, and interpretation of some idea or rule. Dialogue gives rise to the bargaining of the individuals and can alter their minds about the goals they want to achieve before the talk (Barry, 1990).

A mutual assumption is essential to agreement among individuals holding different positions. Popper rejects the 'myth of the framework,' which upholds the impossibility of agreement among people with different intellectual backgrounds (Popper, 1994). This doctrine holds that a successful dialogue among participants is impossible without a mutual framework. Popper argues that the doctrine of the myth of the framework supports an intellectual relativism that divides humanity into different camps. Popper argues that a sincere effort with goodwill would make a discussion successful and productive between different participants to acquire an agreement (Popper, 1994). I endorse Popper's thesis that people can develop agreements across cultures through discourse. Discourse plays a significant role in developing and getting agreements because it eradicates misconceptions among people. Hence, discourse strategy is promising for altering the relative conceptions of good for developing an agreement. The Prisoner's Dilemma does not use the discourse strategy because, as above, the game assumes that the actors cannot communicate. However, the Pardoner's Dilemma provides the opportunity for discourse among players.

5.4 Balloting

Balloting is casting votes to reach decisions about a policy, select a leader, or make a law. Balloting is considered synonymous with democracy. In politics, mostly rational decision-makers try to obtain what is in their self-interest by casting a vote to select a member of parliament. According to Barry, voting could be helpful to resolve a dispute in case of more than two parties. It would stop the confrontation among parties by deciding through an election. The party or policy with more votes is chosen (Barry, 1990).

The construction of a democratic government by balloting is a popular political notion in the modern world. In this way, people participate in the political process for the development of the state. The majority vote is the decisive vote that provides legitimacy to a law, policy or political ruler. Hence, balloting is a collective behaviour that promotes cooperation among individuals. Like discourse, Prisoner's Dilemma does not use the strategy of balloting. Yet, in the Pardoner's Dilemma, players can use the strategy of balloting to resolve conflicts.

5.5 Tossing

Tossing is a useful strategy for resolving conflicts. The notion of tossing is the application of probability theory. For instance, tossing a coin, throwing dice and picking straws (Barry, 1990). Sometimes, tossing is useful for distributing goods, but it cannot be applied to all situations. For instance, a judge must not decide a case employing the strategy of tossing for the life or death of an accused. A judge must undergo a legal procedure to make a judgment about the conviction of the accused. Similarly, a doctor cannot identify a disease in a patient by throwing dice and declaring some disease. On the contrary, a doctor must examine the patient through a formal medical procedure to identify the real problem in the patient.

Tossing as a strategy may be promising when two similar goods would be distributed to two applicants, and then picking straws or flipping a coin could be helpful. For instance, at the beginning of a cricket match, the umpire decides by flipping a coin which team will bowl first and bat later. Tossing is missing in the Prisoner's Dilemma, while the Pardoner's Dilemma has the possibility of tossing.

5.6 Competition

Competition is also useful for deciding matters: two or more parties contest for a common interest. For instance, teams contest a match to win. Political parties contest an election to rule. A lover wants to win a duel to marry a gorgeous woman. Every competition requires two or more participants who play under the rules of the game. In competitions, one party wins and the other party loses, and sometimes, a match can be drawn. Winning a competition proves one's ability, power, and efficiency. One who wins the competition gets the advantage. In game theoretic jargon, competition is normally known as a zero-sum game. If parties do not settle their disputes through dialogue, the parties take competition to decide the matters. In a prisoner's dilemma, agents either

cooperate or defect. In a case of cooperation, there is no contest, while defection is a form of contest when everybody involved aims to gain the maximum. However, the Pardoner's Dilemma offers direct competition among the players to resolve the disputes.

5.7 Arbitration

'Arbitration' refers to a neutral agent who can settle the disputes among people. An arbitrator should be impartial, fair and moral agent who can decide the dispute among individuals for their common good. An umpire in sports or a judge in a court is an arbitrator to settle conflicts among people. Thomas Hobbes's notion of a sovereign authority is the epitome of an arbitration in political thought. A state as an agent is an authoritative determinator to sustain the order in society and if the state does not behave morally or impartially, there would be no solution to the conflicts. That is why where governments are corrupt there are many disputes among the citizens. Barry contrasts arbitration with the previous six methods. In the former methods, people resolve the dispute themselves, but arbitration involves setting an authority to decide how conflicts will be resolved (Barry, 1990). Prisoner's Dilemma does not use the strategy of arbitration. However, the Pardoner's Dilemma has the scope of arbitration.

All the above discussed situations and their corresponding methodologies for resolving conflicts are based on two notions: cooperation and conflict. In life, different situations occur at different times, and, sometimes, different approaches are required to be adopted to resolve conflicts. If François, Charles and Hubert were real human agents, they had fair play in the distribution of the treasure, and they would have had a good life. In the "Pardoner's Tale", the players, in the Kantian sense, did not treat one another as an end. They even did not consider themselves if they were brothers to one another. In a general sense, they did not have reverence for each other.

6. The Pardoner's versus the Prisoner's Dilemmas: A Juxtaposition

There are several similarities and dissimilarities between Prisoner's and Pardoner's Dilemmas. Both approaches have striking similarities: First, they explain the dilemmatic state of affairs in which agents may adopt the strategy of collaboration or conflict to obtain their self-interests. Second, both game theories show that the outcome depends upon the mutual decisions of the individuals; cooperation benefits them, while conflict provides them with disadvantages. Third, both game theories reveal that there are different possibilities ranging from the worst to the best for all the players. In Prisoner's Dilemma,

the best case for both James and William are 1-year imprisonment, while the worst case for both is the 5-year jail. In the Pardoner's Dilemma, case no. 1 is the worst, while case no. 9 is the best for all players.

There are key differences between the Pardoner's and the Prisoner's Dilemmas: First, the Prisoner's Dilemma provides a conditional situation for the players, while the Pardoner's Dilemma provides a contractual situation for the players. If people respect the contract which they make themselves, they will have the common good. But if they do not comply with the contract, there will be disadvantages to all of them. Meanwhile, the Prisoner's Dilemma provides rules of the game that players do not set for themselves. Second, mutual communication among players is another key difference between the Pardoner's Dilemma and the Prisoner's Dilemma. Prisoners' Dilemma keeps the players in isolated spaces, and they are not allowed to communicate with one another. Instead, the Pardoner's Dilemma allows agents to communicate with one another. In this way, Pardoner actors make agreements, contracts, or promises themselves and are obligated to comply with those agreements they have made themselves. Whatever the agreements and contracts they formulate, they are obligated to obey them. Third, the Prisoner's Dilemma is limited to two options: cooperation and conflict. In contrast, the pardoner's dilemma holds many possibilities, such as discourse, bargaining, exchange, combating, and tossing among the individuals. Fourth, the Prisoner's Dilemma does not explain the relationship between individual and collective rationality (Rapoport, 1992). Instead, the Pardoner's Dilemma has the capacity to explain the relationship between individual and collective rationality.

7. Conclusion

This article introduced the Pardoner's Dilemma as a game theory and juxtaposed it with the Prisoner's Dilemma. Game theory has emerged as a significant approach to explain rational behaviour in the twentieth century. Game theorists converge on the applicability of the Prisoner's Dilemma in the academic and non-academic world. The Pardoner's Dilemma as a game theory has been drawn from Geoffrey Chaucer's classic literary work, *The Canterbury Tales*. I argued that in the game-theoretic framework, the Pardoner's Dilemma is more promising than the Prisoner's Dilemma because the latter does not incorporate several key game strategies, including negotiation, communication, compromise, arbitration, tossing, and balloting. The Pardoner's Dilemma incorporates numerous strategies for resolving conflicts and creating cooperation among players.

The Prisoner's Dilemma works under certain situations in which players cannot make dialogue and reach an agreement. In Prisoner's Dilemma, what players acquire completely depends upon chance. Using the same action, one may get a maximum good or a maximum bad. In contrast, the Pardoner's Dilemma is consistent with the public reasoning under a contractual framework developed by significant social and political theorists, particularly John Rawls and Jurgen Habermas. Rational dialogue is one strategy. The Pardoner's Dilemma offers several such game strategies, particularly arbitration, balloting, and tossing. Like the Prisoner's Dilemma, the Pardoner's Dilemma explains zero-sum and non-zero-sum games. Thus, the article introduced Pardoner's Dilemma as a new game-theoretic approach in decision theory that would enhance the scope of game theory.

Acknowledgements: *The author would like to thank Dr Carolyn Mason, Dr Douglas Campbell, and Professor Mark Francis, faculty members of the Department of Philosophy and Political Science, University of Canterbury, Christchurch, New Zealand, for reading the original manuscript and making valuable comments and suggestions.*

8. References

Barry, B. M. (1987). "Rationality". In *The Blackwell Encyclopaedia of Political Thought*, ed. David Miller. Oxford, UK and New York, USA: Blackwell.

Barry, B. M. (1990). *Political Argument: A Reissue With a New Introduction*. University of California.

Binmore, K. (2007). *Playing for Real: A Text on Game Theory*. Oxford and New York: Oxford University Press.

Chaucer, G. (1958). *The Canterbury Tales*. ed. Nevil Coghill. Reprint. London: Penguin Books.

Coleman, J. S. (1974). *Power and the Structure of Society*. New York: W. W. Norton and Company, Inc.

Coleman, J. S. (1990). *Foundations of Social Theory*. Cambridge and London: The Belknap Press of Harvard University Press.

Ealau, H. (1993). "The Root is Man". In Neil J. Kressel (ed.). *Political Psychology: Classic and Contemporary Readings*. New York: Paragon House Publishers.

Ferreira, J. L. (2020). *Game Theory: An Applied Introduction*. Bloomsbury Publishing.

Floridi, L. (2023). *The Ethics of Artificial Intelligence: Principles, Challenges, and Opportunities*. Oxford: Oxford University Press.

Goodin, R. E. (1976). *The Politics of Rational Man*. London and New York: John Wiley and Sons, 23;

Hardin, R. (1982). *Collective Action*. Baltimore and London: The Johns Hopkins University Press.

Hardin, R. (1995). *One for All: The Logic of Group Conflict*. Princeton and New Jersey: Princeton University Press.

Harsanyi, J. C. (1977). *Rational Behaviour and Bargaining Equilibrium in Games and Social Situations*. Cambridge: Cambridge University Press.

Hobbes, T. (1998). *Leviathan*. ed. J. C. A. Gaskin. Oxford and New York: Oxford University Press.

Hobbes, T. (2017). *Three-Text Edition of Thomas Hobbes's Political Theory: The Elements of Law, De Cive and Leviathan*. Ed. Deborah Baumgold. Cambridge: Cambridge University Press.

Nash, J. F. (1996). *Essays on Game Theory*. UK: Edward Elgar.

Neumann, J. & Morgenstern, O. (1974). *Theory of Games and Economic Behaviour*. Princeton: Princeton University Press.

Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups.* Cambridge, Massachusetts and London, England: Harvard University Press.

Patterson, L. (2007). "The Pardoner's Dilemma" (pp. 161-182), in Lee Patterson (ed.). *Geoffrey Chaucer's The Canterbury Tales: A Casebook*. Oxford and New York: The Oxford University Press.

Popper, K. R. (1994). *The Myth of the Framework: In Defence of Science and Rationality*, ed. M. A. Notturno. London and New York: Routledge.

Poundstone, W. (1992). *Prisoner's Dilemma*. New York: Anchor Books-Random House.

Poundstone, W. (2013). *The Recursive Universe: Cosmic Complexity and the Limits of Scientific Knowledge*. Courier Corporation.

Rapoport, A. (1962). "The Use and Misuse of Game Theory", *Scientific American* 207, no. 6, 108.

Rapoport, A. (1974). "War and Peace", *The Annals of the American Academy of Political and Social Science* 412, no. 1, 156.

Rapoport, A. (1992). "Game Theory Defined: What it Is and is Not", *Rationality and Society* 4, no. 1, 74-5

Rapoport, A. (1999). "Decision Theory and Game Theory". In *Encyclopaedia of Violence, Peace and Conflict*, ed. Lester R. Kurtz. Vol. 1 (A-E). 545-57. London: Academic Press.

Schelling, T. C. (1980) *The Strategy of Conflict*. Reprint. Cambridge, Massachusetts and London, England: Harvard University Press.

Sen, A. (1977). "Rational Fools: A Critique of the Behavioural Foundations of Economic Theory". *Philosophy and Public Affairs* 6, no. 4.

Sen, A. (2009). *The Idea of Justice*. Cambridge: Harvard University Press.

Wooldridge, M. J. (2000). *Reasoning about Rational Agents*, Cambridge, USA and London, UK: MIT Press.