Machiavelli's Conspiracy Games[1]

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Abstract: This paper analyzes conspiracy in the form of a game and demonstrates how to plan and execute a successful conspiracy – and how to prevent its success. It discusses conspiracy and the inherent strategic relationship from the point of view of rational agents and shows that in many cases an equilibrium does not exist from which recipes of rational behavior for the parties in question can be derived. The analysis is based on Machiavelli's very informative and highly competent writings on this subject. Was Machiavelli's treatment of the subject meant to be another step towards his demystification of power and politics, or did he want to demonstrate to the reader how skilled and capable he was in political reasoning?

Keywords*: Machiavelli, conspiracy, power, game theory, Nash equilibrium.*

> *"I must say in general on this occasion that conspiracies and assassinations are not too common any longer in the world. Princes can rest easyon that score. These crimes have passed out of fashion, …"*
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> *Frederick of Prussia (1981[1740]:121f) in his Anti-Machiavel*

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1. Some strange loops

Trivially, not all games are a source of pleasure and fun, however, to discuss and analyze conspiracy in the form of a game might be considered as truly Machiavellian.[2] In fact, in his *Discorsi*, Machiavelli dedicated a full chapter to the discussion of conspiracy. This does not seem to come as a surprise if we share the common, but rather questionable (and unjustified) view that ranks Machiavelli as master of cruelties and betrayals. However, the remarkable analytical and historical depth of his discussion might trigger second thoughts. In this paper, we will try to clarify some of the strategic relationships inherent to the subject of conspiracy, but also relevant for Machiavelli's treatment of it. It mainly draws from the material of Chapter VI of Book III of Machiavelli's *Discourses* entitled 'Of Conspiracies.' This chapter summarizes most of what can be found on conspiracies in *The Prince* and the *History of Florence*, although Chapter XIX of the former and the Eighth Book of the latter contain treasures. Some of the material will be quoted below.

Machiavelli (*Discourses* 329) starts his lecture on conspiracy with a somewhat paradoxical observation: On the one hand, "history teaches us that many more princes have lost their lives and their states by conspiracies than by open war," and, on the other hand, conspiracies, "though so often attempted, yet they so rarely attain the desired object." The answer to this riddle is that conspiracies are ubiquitous but very often fail because preparation and execution were inadequate, the executors were incompetent or unlucky, and the situation was not what it was considered to be. Economists would call these failures a social waste.

Machiavelli (*Discourses* 329) promises that he will "treat the subject at length, and endeavor not to omit any point that may be useful to the one or the other…so that princes may learn to guard against such dangers, and that subjects may less rashly engage in them, and learn rather to live contentedly under such a government as Fate may have assigned to them." What is the goal of this project - to reduce the social waste of unsuccessful conspiracies or to reduce the inclination of the people to revolt if they are unhappy with their prince? It seems that Machiavelli is especially concerned about those high ranking conspirators who "almost [themselves] king[s]…blinded by the ambition of dominion, they are equally blind in the conduct of the conspiracy, for if their villainy were directed by prudence, they could not possibly fail of success" (*Discourses* 333).

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[2] Shakespeare was perhaps the first who propagated this term to label malicious and insidious behavior to a wider audience. See Act III, Scene 1, of his *The Merry Wives of Windsor* and Act III, Scene II, of his *The Third Part of Henry the Sixth.*

It seems quite paradoxical that Machiavelli's analysis sharpens the tools of both sides of the conspiracy game. Potential conspirators will learn when there is a chance of success and how to increase this chance. The princes are told how to reduce this chance. In the equilibrium we would see successful conspiracies only, triggered in situations that the princes could not avoid. The chance to face such situations can be minimized, and this might be Machiavelli's message, if the prince is 'loved by the people,' if he installs good laws and submits himself to these laws.

Given this interpretation, however, it seems rather paradoxical to assume that Machiavelli was interested in the social waste of unsuccessful conspiracy and therefore tried to teach 'economic rationality' to the agents of both sides, which he did. He developed a rational theory of conspiracy that follows the pattern of a cost-benefit analysis - with the qualification that expected benefits are likely to be zero, if benefits are standardized such that zero is the minimum, and costs 'converge to infinity,' in case that the conspiracy is expected to fail. Of course, the value of infinity is ill defined.

There is still another puzzle involved: "…conspiracies have generally been set on foot by the great, or the friends of the prince; and of these, as many have been prompted to it by an excess of benefits as by an excess of wrongs" (*Discourses* 333). Plots are generally organized by "great men of the state, or those on terms of familiar intercourse with the prince" (*Discourses* 332).

There are strong arguments why only those agents can stage a successful conspiracy who are close to the prince, and why, as history shows, those who conspire enjoy generous benefits from this closeness. "A prince, then, who wishes to guard against conspiracies should fear those on whom he has heaped benefits quite as much, and even more, than those whom he has wronged; for the latter lack the convenient opportunities which the former have in abundance" (*Discourse* 333). It appears that princely benefits to close friends do not prevent conspiracies since this group of people can expect to achieve success. However, probabilities that capture expectations are not given, but subject to the interaction of the agents involved. To some extent the forming of expectations boils down to a game theoretical problem but, as we will see below, this does not guarantee that there is a satisfactory solution to it. Non-uniqueness of equilibria is ubiquitous and a source of uncertainty even for rational agents. Moreover, the set of agents, those who participate in the conspiracy and those who counteract it, is often subject to the course of the game itself.

Why did Machiavelli develop such a theory if not for demonstrating that the prince can avoid conspiracies if potential conspirators are rational enough to accept the benefits which a rational prince offers to them, given

the risks involved? Was this another step towards his demystification of power and politics or did he want to demonstrate to the reader how skilled and capable he was in political reasoning?[3] We will come back to this issue in the concluding Section 6 of this paper. Section 2 deals with Machiavelli's treatment of strategies of the conspirators while Section 3 contains advice to the prince on how to counteract the threat of conspiracies. In section 4, the conditions and effects of the staging of conspiracy as a means of the prince to gain power is analyzed. Section 5 presents a rather simple game theoretical model of the conspiracy problem and a corresponding analysis. It illustrates and analyzes the relationships between the conspirator and the prince and demonstrates the complexity of this relationship even in the very simplified setting of a 2-by-2 matrix game. This section is meant to be both an illustration and an experiment of Machiavellian thinking using a modern language: game theory. The message is: conspiracy is a problem of strategic thinking and game theory is its adequate language.

Some readers may interpret the use of formal game theory as truly Machiavellian. Indeed we think that this "strange loop"[4] may introduce some readers to game theory who so far succeeded to circumvent this method and thereby, and this is our contention, suffered non-negligible losses. In any case this project of ours was meant to be a temptation, perhaps a trap, but not a cruelty. So let us start the game and think about the strategies of the conspirators, on the one hand, and the prince, on the other. Note that game theory defines strategies as "plans of action."

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[3] Note, however, unlike the *Il Principe*, the *Discorsi* (that contains the chapter 'Of Conspiracies') is not dedicated to a prince but to two friends: Zanobi Buondelmonti and Cosimo Rucellai. Machiavelli is very explicit about this dedication and explains: "I give some proof of gratitude, although I may seem to have departed from the ordinary usage of writers, who generally dedicate their works to some prince; and, blinded by ambition or avarice, praise him for all the virtuous qualities he has not, instead of censuring him for his real vices, whilst I, to avoid this fault, do not address myself to such as are princes, but to those who by their infinite good qualities are worthy to be such; not to those who could load me with honors, rank, and wealth, but rather to those who have the desire to do so, but have not the power. For to judge rightly, men should esteem rather those who are, and not those who can be generous; and those who would know how to govern states, rather than those who have the right to govern, but lack the knowledge" (Discourses 91f). In 1522, Buondelmonti participated in the conspiracy against the Medici which, however, failed. He fled to France and served King François I until he could return after the expulsion of the Medici in 1527.

[4] This term was used by Hofstadter (1980) to characterize self-referential systems. A "game of strategies," like chess, is such a self-referential system if player 1 assumes that player 2 thinks about what player 1 is thinking, and vice versa.

2. The conspirator's strategies

Machiavelli identifies three phases of danger for the conspirators that, if specified, constitute a complete strategy: the plotting, the execution of the plot, and the period after the plot was carried out. If the plot is formed by a single person, then, of course, the 'first of the dangers' is avoided. In addition, the project can be postponed or put to rest without major costs or risks. This could be a great advantage when its success does not look very promising, especially if the situation has changed. Many such plots never leave the state of planning and rejection: They are secret and remain secret. Machiavelli notes that "it is not uncommon to find men who form such projects (the mere purpose involving neither danger nor punishment), but few carry them into effect; and of those who do, very few or none escape being killed in the execution of their designs, and therefore but few are willing to incur such certain death" (*Discourses* 332). Since the conspirator is in general not able to structure the minutes immediately following the execution in a constructive way, single assassins are likely to lose their lives even when they succeed in killing the tyrant.

One-person plots are somewhat degenerated cases of conspiracies. They lack the elements of communication, coordination and trust that characterize non-degenerate cases and often cause them to fail. However, as Machiavelli demonstrates, successful multi-person conspiracies are designed such that they simulate one-person plots. The one-person plot is therefore a model case. But only plots that involve a number of persons necessitate a conspiracy proper and imply problems of coordination and perhaps communication as well.

Machiavelli distinguishes between two arrangements of conspiracy proper: the two-person plot and the multi-person plot. The two-person plot has the disadvantage that possible actions are constrained by numerical capacity and shortage of means. However, compared to a plot that involves more than two persons, it offers a series of advantages. If there are more than two persons involved then, according to Machiavelli, most successful strategies either reduce the situation to a two-person plot or, if possible, even to a one-person plot.

Indeed, in cases of more than one agent, most conspiracies fail because of denunciation and not because of lack of means or occasions. Machiavelli states: "Denunciation is the consequence of treachery or of want of prudence on the part of those to whom you confide your designs; and treachery is so common that you cannot safely impart your project to any but such of your most trusted friends as are willing to risk their lives for your sake, or to such other malcontents as are equally desirous of the prince's ruin." However, "men are very apt to deceive themselves as to the

degree of attachment and devotion which others have for them, and there are no means of ascertaining this except by actual experience; but experience in such matters is of the utmost danger. And even if you should have tested the fidelity of your friends on other occasions of danger, yet you cannot conclude from that that they will be equally true to you on an occasion that presents infinitely greater dangers than any other" (*Discourses* 334). In other words, there is no adequate test for co-conspirators; the only test is the conspiracy itself. But is this a test?

Alternatively, a potential conspirator could collect information, but, of course, the willingness and competence of others who conspire is limited and information is lacking or likely to be biased. Indirect or flawed evidence can be deceptive and change the situation to the disadvantage of the conspirator. As Machiavelli observed: "If you attempt to measure a man's good faith by the discontent which he manifests towards the prince, you will be easily deceived, for by the very fact of communicating to him your designs, you give him the means of putting an end to his discontent" by passing on valuable information to the prince and thus improving his or her lot. "It is thus that so many conspiracies have been revealed and crushed in their incipient stage; so that it may be regarded almost as a miracle when so important a secret is preserved by a number of conspirators for any length of time" (*Discourses* 334).

Machiavelli is even more explicit about the dilemma of trust and the problem of betrayal in his *Il Principe* "…for he who conspires cannot act alone, nor can he take any associates except such as he believes to be malcontents; and so soon as you divulge your plans to a malcontent, you furnish him the means wherewith to procure satisfaction. For by denouncing it he may hope to derive great advantages for himself, seeing that such a course will insure him those advantages, whilst the other is full of doubts and dangers. He must indeed be a very rare friend of yours, or an inveterate enemy of the prince, to observe good faith and not to betray you" (*Prince* 61).

However, conspiracy might fail by sheer imprudence. Needless to say that disclosure from a lack of prudence increases with the number of conspirators involved and with the time of preparation that elapses. Machiavelli reports the following incidence: "The day before he was to have killed Nero, Scevinus, one of the conspirators, made his testament; he ordered his freedman Melichius to sharpen an old, rusty poniard, enfranchised all his slaves and distributed money amongst them, and had bandages made for tying up wounds. Melichius surmised from these various acts what was going on, and denounced it to Nero. Scevinus was arrested, and with him Natales, another conspirator, with whom he had been seen to converse secretly for a length of time. As their depositions respecting that conversation did not agree, they were forced to confess the

truth, and thus the conspiracy was discovered to the ruin of all that were implicated" (*Discourses* 335).

Of course, Scevinus' preparations were of utmost imprudence, however, if Natales, the second conspirator, had not been identified, Scevinus could still have made up a story and finding out the truth would have been impossible. In fact, it was in Scevinus' interest to make up a story which explained his preparations conclusively without any reference to a conspiracy. Competent conspirators should prepare an alternative story and such a story can be powerful as the conspiracy against Hieronymus, King of Syracuse, demonstrates: "Theodorus, one of the conspirators, having been arrested, concealed with the utmost firmness the names of the other conspirators, and charged the matter upon the friends of the king; and, on the other hand, all the other conspirators had such confidence in the courage of Theodorus, that not one of them left Syracuse, or betrayed the least sign of fear" (*Discourses* 335; with reference to Titus Livius). Applying the theory of rational decision making or, more specifically, game theoretical reasoning could reveal to us that for Theodorus it does not take much courage for his strategy chosen but rather requires the insight that if he confesses or names a conspirator who knows about the plot, the book will be thrown at him. (Those books can be very painful.)

As long as none of the other conspirators was identified the situation had the structure of a one-man plot in its planning stage – and if the conspirator is lucky the prince will not be serious about the project, perhaps even qualify the conspirator as victim of madness. It is a most promising strategy to keep a multi-person conspiracy in this stage until its execution. Therefore, a multi-person conspiracy necessitates immediate action that leaves no loophole for free-riding or even betrayal. Machiavelli illustrates the implementation of such a policy by the example of Nelematus, who, "unable to bear the tyranny of Aristotimus, tyrant of Epirus, assembled in his house a number of friends and relatives, and urged them to liberate their country from the yoke of the tyrant. Some of them asked for time to consider the matter, whereupon Nelematus made his slaves close the door of his house, and then said to those he had called together, 'You must either go now and carry this plot into execution, or I shall hand you all over as prisoners to Aristotimus.' Moved by these words, they took the oath demanded of them, and immediately went and carried the plot of Nelematus successfully into execution" (*Discourses* 336).

The example demonstrates that Nelematus did not only rely on the speed of execution but also on the double-binding power of treachery. Those who can betray can also be betrayed. Often it is only a question who is the first mover; Nelematus grabbed the first-mover advantage. However,

if possible, a conspirator should confide his secret project to one person only even when it involves a larger number of conspirators. One person, "whose fidelity he has thoroughly tested for a long time, and who is animated by the same desire as himself…is much more easily found than many…and then, even if he were to attempt to betray you, there is some chance of your being able to defend yourself, which you cannot when there are many conspirators" (*Discourses* 337).

With one partner only and no written word there is still a chance to go free, when accused for conspiracy. Machiavelli observes "…that you may talk freely with one man about everything, for unless you have committed yourself in writing the 'yes' of one man is worth as much as the 'no' of another; and therefore one should guard most carefully against writing, as against a dangerous rock, for nothing will convict you quicker than your own handwriting" (*Discourses* 337).

A handwritten message can transgress the bounds of a private communication between two persons and make it public. What could have been merely one man's word against another's becomes a potential threat when it is written down. But hand written notes can also be a means to bind the fellow conspirators in the case of multi-person conspiracy. Alternatively, an illegal action, like jointly robbing a state treasure, could be a binding pre-commitment for a conspiracy and avoiding betrayal.[5]

In summary, Machiavelli identifies two risks "in communicating a plot to any one individual: the first, lest he should denounce you voluntarily; the second, lest he should denounce you, being himself arrested on suspicion, or from some indications, and being convicted and forced to it by the torture. But there are means of escaping both these dangers: the first, by denial and by alleging personal hatred to have prompted the accusation; and the other, by denying the charge, and alleging that your accuser was constrained by the force of torture to tell lies. But the most prudent course is not to communicate the plot to any one, and to act in accordance with the above-cited examples; and if you cannot avoid drawing someone into your confidence, then to let it be not more than one, for in that case the danger is much less than if you confide in many" (*Discourses* 338).

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[5] Bolle and Breitmoser (2009) give a game theoretical analysis of such self-binding mechanisms that may even transform a victim of kidnapping into a "partner in crime" of the kidnappers.

3. The counter-plot of the prince

There are numerous examples of the glory and the pomp of the prince as well as his royal or divine position and reputation stopping conspirators from putting their daggers in his breast. Sometimes the kindness or the beauty of the prince also prevents a successful execution of the plot.[6] However, history shows that this pattern, appealing to sheer properties of personality and position, does not always work and the prince is well-advised to develop an ex-ante strategy. In Machiavelli's writings, we find substantial material that could help the prince discourage conspirators if he feels that glory, pomp, reputation, and divinity may not be sufficient to protect his life and position. Of course, thinking about on-the-spot solutions, the corresponding strategies of the prince to counter a plot are generally defined by the action the conspirators take. Typically, conspiracy is a sequential game that sees the prince as a second mover when it comes to the *execution*. Often, however, conspiracies are triggered off by the prince himself and, in fact, he is the first mover in this game. Of course, poor policy could invite conspiracy, but sometimes the princely invitation to plot is even more specific.

In the extreme, a conspiracy can begin when the tyrant threatens to take away the fortune or the life of persons close to him. The deadly plot against Emperor Commodus, reported in the *Discourses* (339), illustrates the second case: He "…had amongst his nearest friends and intimates Letus and Electus, two captains of the Prætorian soldiers; he also had Marcia as his favorite concubine. As these three had on several occasions reproved him for the excesses with which he had stained his own dignity and that of the Empire, he resolved to have them killed, and wrote a list of the names of Marcia, Letus, and Electus, and of some other persons, whom he wanted killed the following night. Having placed this list under his pillow, he went to the bath; a favorite child of his, who was playing in the chamber and on the bed, found this list, and on going out with it in his hand was met by Marcia, who took the list from the child. Having read it, she immediately sent for Letus and Electus, and when these three had thus become aware of the danger that threatened them, they resolved to forestall the Emperor, and without losing any time they killed Commodus the following night."

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[6] Giovan Battista, the designated murderer of Lorenzo de′ Medici in what became the Conspiracy of the Pazzi, "was filled with admiration for Lorenzo, having found him to all appearances quite a different man from what had been presented to him; and he judged him to be gentle and wise" (*History:* 372).

This case demonstrates that "the necessity which admits of no delay" produces here the same effect as the means employed by Nelematus described above. It also reveals how a prince can provoke a conspiracy. This could be a profitable strategy, if the prince is aware of it – as we see below -, but it can be a deadly one as in the case of Commodus. Of course, if a prince wants to avoid a conspiracy then he should never design a situation in which the agent has only two alternatives: to perish or to fight. However, this can only be a necessary condition, but not a sufficient one if conspiracy should be avoided. The sequential structure of the execution of a conspiracy suggests that a high degree of unsteadiness in the daily routine of the prince might be a good protection. Given the constraints of secret communications, conspirators have in general great difficulties to adapt to changing conditions or even to revise their plans.

The standard example for the latter is the conspiracy of the Pazzi against Lorenzo and Giuliano de' Medici.[7] Plans were made that, in April 1478, the two should be killed at a dinner with Cardinal San Giorgio. While the two Medici and the Cardinal attended mass in the cathedral the rumor spread that Giuliano would not come to the dinner. Plans had to be changed and it was decided to commit the murder in the church. Not only did this alienate Giovan Battista, a competent conspirator who was assigned to kill Lorenzo, such that the roles had to be redistributed, but it led to a series of mistakes. Giuliano was killed by Francesco Pazzi as planned, but, because of the incompetence of Antonio da Volterra who was supposed to replace Giovan Battista, Lorenzo was able to defend himself and got away only slightly wounded. Not only did he become Lorenzo Magnifico and govern Florence with almost dictatorial power until his death in 1492, but he also had the means to go ruthlessly after those conspirators, who were not already killed during the execution of the plot - like Franceso Salviati, the Archbishop of Pisa -, and erase the Pazzi family from the Florence scenery. In fact, when the conspirators tried to gain control over the government the people of Florence, rather unexpectedly, rallied to the Medici. This proves that investing in the love of the people, as Machiavelli repeatedly pointed out, can be a very efficient means to counter conspiracy: "…of all the perils that follow the execution of a conspiracy, none is more certain and none more to be feared than the attachment of the people to the prince that has been killed. There is no remedy against this, for the conspirators can never secure themselves against a whole people" (*Discourses* 345).

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[7] The Eighth Book of Machiavelli's *History of Florence*, is dedicated to the description of this plot (see *History*: 371ff). The *Discourses* (340f) contain a summary.

Since the Pazzi conspiracy was supported by Pope Sixtus IV a two-year war with the papacy followed placing a very heavy burden on the City of Florence. But Florence and the Medici survived and both had a brilliant future. Perhaps it should be noted that Lorenzo's son Giovanni ended as Pope Leo X. Giulio, the natural son of Lorenzo's murdered brother Giuliano, followed him in the papacy as Pope Clement VII,[8] not to mention the fact that members of the Medici family became Grand Dukes of Tuscany and mothers to French kings. However, we should emphasize that the support of the people of Florence on the day of the Pazzi conspiracy was decisive for the career of the Medici. Not only did Lorenzo survive, but his position was immensely strengthened by the unsuccessful conspiracy. Machiavelli concludes "…conspiracies rarely succeed, and often cause the ruin of those who set them on foot, whilst those against whom they were aimed are only the more aggrandized thereby" (*History* 368). The latter effect was definitively true in the case of Lorenzo and the Medici.

It seems that a prince who has the love of the people is relatively well protected if conspirators are rational and think about their lives and fate after execution. "…on the side of the conspirator there is nothing but fear, jealousy, and apprehension of punishment; whilst the prince has on his side the majesty of sovereignty, the laws, the support of his friends and of the government, which protect him. And if to all this be added the popular good will, it seems impossible that any one should be rash enough to attempt a conspiracy against him. For ordinarily a conspirator has cause for apprehension only before the execution of his evil purpose; but in this case, having the people for his enemies, he has also to fear the consequences after the commission of the crime, and can look nowhere for a refuge" (*Prince* 61).

To gain the love of the people can, however, be very costly and reduce the resources of the prince considerably, and there can be trade-offs which do not allow to fully use this potential. This was the problem most of the Roman Emperors faced; "where in other principalities the prince had to contend only with the ambition of the nobles and the insolence of the people, the Roman Emperors had to meet a third difficulty, in having to bear with the cruelty and cupidity of the soldiers, which were so great that they caused the ruin of many, because of the difficulty of satisfying at the same time both the soldiers and the people; for the people love quiet, and for that reason they revere princes who are modest, whilst the soldiers love

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[8] In fact, Leo X was followed by a 'German Pope' with the name of Hadrian VI, born at Utrecht and teacher of Emperor Karl V. However, he managed to survive this difficult situation for hardly a year.

a prince of military spirit, and who is cruel, haughty, and rapacious. And these qualities the prince must practise upon the people, so as to enable him to increase the pay of the soldiers, and to satisfy their avarice and cruelty" (*Prince* 63). Quite a few Roman Emperors were installed, exploited and, in the end, even murdered by the soldiers that were meant to protect them. They did not, in contrast to the Medici, succeed in activating the love of the people for protection.

The Medici case also demonstrates the difficulties of conspiring against a multitude of people. As noticed by Machiavelli, "… to strike two blows of this kind at the same instant and in different places is impracticable, and to attempt to do so at different moments of time would certainly result in the one′s preventing the other. So that, if it is imprudent, rash, and doubtful to conspire against a single prince, it amounts to folly to do so against two at the same time" (*Discourses* 342). As a consequence, sharing power looks like a very promising device to decrease the potential of conspiracy. From here, it seems straightforward to argue in favor of the republic, or at least for the creation of a parliament.[9] However, as Machiavelli observed, conspiracies "against the state are less dangerous for those engaged in them than plots against the life of the sovereign. …In the conduct of the plot the danger is very slight, for a citizen may aspire to supreme power without manifesting his intentions to any one; and if nothing interferes with his plans, he may carry them through successfully, or if they are thwarted by some law, he may await a more favorable moment, and attempt it by another way." This applies to a republic that is already partially corrupted, "for in one not yet tainted by corruption such thoughts could never enter the mind of any citizen" (*Discourses* 345). To conspire against a republic bears less risk than conspiring against a prince, unless one does not, like Catilina, fight too hard for a hopeless case.[10]

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[9] Machiavelli observes: "Amongst the well-organized and well-governed kingdoms of our time is that of France, which has a great many excellent institutions that secure the liberty and safety of the king. The most important of these is the Parliament, and its authority" (*Prince* 62).

[10] This case, the Catilinarian conspiracy, was reported by Sallust (86-34 BC) and referred to by Machiavelli (*Discourse* 346): "Everybody has read the account written by Sallust of the conspiracy of 846, and knows that, after it was discovered, Catiline not only stayed in Rome, but actually went to the Senate, and said insulting things to the Senate and the Consul; so great was the respect in which Rome held the citizens. And even after his departure from Rome, and when he was already with the army, Lentulus and the others would not have been seized if letters in their own handwriting had not been found, which manifestly convicted them." See also Frederick of Prussia (1981[1740]:101f) who refers to Catiline.

If a successful conspiracy is obstructed by a multitude of targets to be conspired against, the multitude and anonymity of potential conspirators can also be a good protection for the prince, especially if the prince can avoid putting too much pressure on a single individual or a smaller group. "For if the great men of a state, who are in familiar intercourse with the prince, succumb under the many difficulties of which we have spoken, it is natural that these difficulties should be infinitely increased for the others. And therefore those who know themselves to be weak avoid them, for where men′s lives and fortunes are at stake they are not all insane; and when they have cause for hating a prince, they content themselves with cursing and vilifying him, and wait until someone more powerful and of higher position than themselves shall avenge them" (*Discourse* 332f).

Indeed "those who know themselves to be weak…are not all insane," on the contrary, they might be called 'rational.' They view themselves as members of a large group as defined in Mancur Olson's seminal book *The Logic of Collective Action* (1965): The group does not contain a member whose potential and interest are strong enough to organize a conspiracy, irrespective of what the other members do, given the difficulties of execution and the draconic punishment in case of failure. In principle, the prince can feel safe, even if there are many enemies, as long as there is no pioneer conspirator strong and interested enough to take the lead as the rest will "…wait until someone more powerful and of higher position than themselves shall avenge them," as observed above. Large groups are generally not self-organizing and membership remains dormant if the group does not offer selective incentives that cover membership costs. Membership costs can be extremely high in conspiracy.

There is an additional element that may prevent actions against the prince even when the group of potential conspirators is small and they know of each other. Each of them might hope that the other will do the dangerous job, to avoid risk of failure, on the one hand, and to qualify for a position of power in post-conspiracy times (if it was successful), on the other.[11] He who holds the dagger is hardly ever invited to become the murdered tyrant's successor.

As a consequence, the prince should choose a policy that does not polarize the opposition such that small groups can form. However, if he cannot avoid polarization then it can be safer to have several opponents which compete with each other than a single rival who is strong and motivated enough to organize a conspiracy. If a prince cannot crush such a rival then he better creates a second one.

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[11] The strategic problem can be represented as Volunteer's Dilemma; 'non-volunteering' is a likely outcome. See Diekmann (1985).

But as Machiavelli notes, "princes cannot always escape assassination when prompted by a resolute and determinate spirit; for any man who himself despises death can always inflict it upon others" (*Prince* 66). However, he also demonstrates that the prince has means to reduce the odds of conspirators and to get them interested in other more promising targets.

4. What if a prince conspires?

Of course, the prince can use conspiracy as a means to strengthen his position. This is the general experience we observe in the relationship of one prince to another; it found its ultimate incarnation in the idea and practice of secret diplomacy.[12] Cases are abundant and many are household knowledge. Perhaps less prominent are cases that show a prince who conspires against one of his ministers or generals following Machiavelli's advice that "princes should devolve all matters of responsibility upon others, and take upon themselves only those of grace" (*Prince* 62).

The range of this strategy reaches from the obfuscation policy of democratic governments, which thereby hope to be re-elected,[13] to the prince sacrificing a confidant to gain the support of the people. "Having conquered the Romagna," Cesare Borgia, called the Duke, "found it under the control of a number of impotent petty tyrants, who had devoted themselves more to plundering their subjects than to governing them properly, and encouraging discord and disorder amongst them rather than peace and union; so that this province was infested by brigands, torn by quarrels, and given over to every sort of violence. He saw at once that, to restore order amongst the inhabitants and obedience to the sovereign, it was necessary to establish a good and vigorous government there. And for this purpose he appointed as governor of that province Don Ramiro d'Orco, a man of cruelty, but at the same time of great energy, to whom he gave plenary power. In a very short time D'Orco reduced the province to peace and order, thereby gaining for him the highest reputation. After a while the Duke found such excessive exercise of authority no longer

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[12] In his *Secret Diplomatic History of the Eighteenth Century*, Karl Marx (1969[1856/57]: 86) colorfully describes how England, from 1700, the date of the Anglo-Swedish Defensive Treaty, to 1719, was continually "assisting Russia and waging war against Sweden, either by secret intrigue or open force, although the treaty was never rescinded nor war ever declared." England betrayed her allies to serve the interests of Imperial Russia and her own hopes for large benefits out of a flourishing Russian trade.

[13] This is the theme of a volume edited by Breton et al. (2007) on '*The Economics of Transparency in Politics.*'

necessary or expedient, for he feared that it might render himself odious. He therefore established a civil tribunal in the heart of the province, under an excellent president, where every city should have its own advocate. And having observed that the past rigor of Ramiro had engendered some hatred, he wished to show to the people, for the purpose of removing that feeling from their minds, and to win their entire confidence, that, if any cruelties had been practised, they had not originated with him, but had resulted altogether from the harsh nature of his minister. He therefore took occasion to have Messer Ramiro put to death, and his body, cut into two parts, exposed in the market-place of Cesena one morning, with a block of wood and a bloody cutlass left beside him. The horror of this spectacle caused the people to remain for a time stupefied and satisfied" (*Prince* 25).

This story not only tells us how a prince may establish the law and bring order, and to get rid of a possible rival and potential conspirator, but also how to satisfy the people who had to suffer in this process of transformation. Once the prince is aware that the conspiracy game is sequential and he or she[14] is likely to have the first move, the prince can try to initiate a conspiracy and disclose it, punish the conspirators and gain the respect of his or her enemies and the admiration of the people – and a good excuse why the government is not as successful as it should be. Staging a conspiracy, however, is not always without risk even for the prince, especially if it should serve as a litmus test for the support of confidants. "Dion of Syracuse…by way of testing the fidelity of someone whom he suspected ordered Callippus, in whom he had entire confidence, to pretend to be conspiring against him…Callippus, being able to conspire with impunity against Dion, plotted so well that he deprived him of his state and his life" (*Discourses* 349).

It seems safer for a prince just to pretend that there is a plot, assign the responsibility to some people he or she wants to get rid of, and then let justice prevail. It might be difficult to prove that the suspect is a conspirator, but more often it is impossible to prove for a suspect that he is not. The veil of secrecy is asymmetric and, in the end, it is in favor with the powerful. There are numerous examples that testify this fact, and the powerful often make use of it. No wonder, that if a prince discovers a plot, "…and he punishes the conspirators with death, it will always be believed

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[14] We should not forget such eminent princely women as Catharina Sforza, Lady of Imola and Countess of Forli, also discussed by Machiavelli (*Discourses* 345), and Isabella d'Este. The latter substituted her husband Francesco II, Marquess of Mantua, as regent during many years of his absence and it was her who achieved that Mantua was promoted into a duchy in 1530. Both had decisive encounters with Cesare Borgia, Machiavelli's model hero of *Il Principe*.

that it was an invention of the prince to satisfy his cruelty and avarice with the blood and possessions of those whom he had put to death" (*Discourses* 347).

Machiavelli offers "an advice to princes or republics against whom conspiracies may have been formed. If they discover that a conspiracy exists against them, they must, before punishing its authors, endeavor carefully to know its nature and extent, - to weigh and measure well the means of the conspirators, and their own strength. And if they find it powerful and alarming, they must not expose it until they have provided themselves with sufficient force to crush it, as otherwise they will only hasten their own destruction" (*Discourses* 347).

The following section illustrates Machiavelli's conspiracy reasoning and its strategic implications. As game theory is the language created to represent strategic relationships between decision makers, it seems to be appropriate to apply it here and check whether it contributes to the interpretation of Machiavelli's text. What follows can also be understood as an experiment.

5. The conspirator-prince game

This above quote is of interest in many ways: First, it mentions republics, and second it is explicitly meant as an advice. However, as pointed out by Machiavelli, the conditions and effects of conspiracy are hardly ever as clear-cut as in the situation just described. Even if we assume that the conspirators and the prince are rational decision makers – a condition that is in general inappropriate especially if one of the parties is a collectivity – , the strategic situation can be rather complex. This can be demonstrated by a simple 2-by-2 matrix game that connects the decisions of the conspirator and the prince under the assumption of imperfect information. We assume that the players know their strategies and payoffs as well as the strategies and payoffs of the other party. And we assume that both players know that the other player has this information, and both players know that the other player knows that players have this information, and so on. Of course, this is a hardly acceptable simplification, but as we will see there is enough leeway for a "missing determinism." Let us proceed.

A rational conspirator i will initiate a plot if the expected utility from plotting is at least as large as the expected utility from not plotting.

$$r\,u_i(\text{successful plotting}) + (1\text{-}r)\,u_i\,(\text{plot and fail}) \geq u_i(\text{not plotting}) \quad (1)$$

Since r is the probability that i's plot is successful, condition (1) assumes that the expected utility hypothesis works. In general, a plot falls into one of the two categories: successful plot with a possibility to take the

prince's position or to install an arrangement which comes close to it; and failure which can imply all kinds of cruel punishments or related losses. It seems plausible to assume that i's preference order will be such that he prefers the outcome 'successful plotting' to 'not plotting' and 'not plotting' to 'plot and fail.' Thus condition (1) contains a decision problem.

Let's assume conspirator i can evaluate the utilities (payoffs) such that they can be expressed as cardinal measures so that the multiplication assumed in (1) can work. But does the conspirator know r? Probability r could be given by 'nature,' or depend on the policy of the prince, on the behavior, number and competence of fellow conspirators. Machiavelli gives a series of factors that could influence r and proposes a set of tools to reduce it. The probability r may even depend on i's payoff.

Prince j

	Strategies	control	not control
	plot	(a, α)	(b, β)
Conspirator i	not plot	(c, γ)	(d, δ)

Figure 1*: The conspirator-prince game*

We can illustrate such a possible relationship by the two-person game in Figure 1. Here i is the conspirator and j is the prince. It is assumed that neither i nor j can observe the strategy choice of the other, i.e., the game is a case of imperfect information. This assumption seems quite plausible when it comes to conspiracy.

For the payoffs of the two players we assume that conditions $b > a$, $b > d$, $c > a$, $c > d$ and $\alpha > \beta$, $\alpha > \gamma$, $\delta > \beta$, $\delta > \gamma$ hold.[15] We assume that both players know their payoffs but also the payoffs of the other party. This looks like a heroic assumption but Machiavelli convincingly argues that conspirators are close to the prince. Moreover, when it comes to prominent issues, such as power and death, then at least the ordinal values should be common knowledge. The following analysis, however, assumes that the expected utility hypothesis applies, which allows for multiplying utilities and probabilities, and thus presupposes that utilities are cardinal. However, we abstain from the assumption that utilities are interpersonally

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[15] These conditions guarantee that both Nash equilibrium and maximin solution are in mixed-strategies (see Holler 1990).

comparable: We cannot tell whether the prince is happier than the conspirator, or whether the reverse holds, although in some situations a conclusion seems to be straightforward.

Given these specifications, Figure 1 represents the payoff matrix of a two-by-two game of complete, but imperfect information. None of the two players has a dominant strategy. Thus, what is good choice for player *i* depends on the strategy choice of *j*, and vice versa, i.e., Figure 1 represents a non-degenerated strategic situation. Should a game theorist describe the expected outcome then he falls back on choices that imply a Nash equilibrium, i.e., a pair of strategies such that none of the two players can get a higher payoff by choosing an alternative strategy, given the strategy of the other player.[16] Obviously, no such pair of pure strategies exists in the game of Figure 1 (which describes an *inspection game*[17]). However, if we assume that *i* and *j* choose strategies "plot" and "control" with probabilities *p* and *q*, respectively, then the (*p**,*q**) defines a Nash equilibrium if $p*$ and $q*$ satisfy the following conditions:

$$p* = \frac{\delta - \gamma}{\alpha - \beta - \gamma + \delta}$$

(2)

$$q* = \frac{d - b}{a - b - c + d}$$

(3)

If conspirator *i* chooses *p** then the prince *j* is indifferent between 'control' and 'not control' and, of course, any *p* that mixes the two. The corresponding property applies to *q**. Thus, neither *i* nor *j* is motivated to deviate from *p** and *q**. The trouble with this equilibrium is that, given *q**, why should *i* select *p**, and why should *j* select *q** if *i* chooses *p**, or if *j assumes* that *i* chooses *p**?

The Nash equilibrium *(p*,q*)* is weak, i.e., if the conspirator deviates from *p**, then, of course, his payoffs will not increase, given *q**, as *(p*,q*)* is an equilibrium, but neither will his payoffs decrease. The same applies if the prince deviates from *q**, given the conspirator chooses *p**. Why should a player choose a Nash equilibrium strategy if he expects the other player to choose a Nash equilibrium strategy?

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[16] This is the definition of a Nash equilibrium. In his doctoral thesis, John Nash (1951) has given the proof that for every finite game such an equilibrium exists: either in pure or in mixed strategies.

[17] See Andreozzi (2002, 2004) for literature and further analysis.

There are still other incentive problems with the Nash equilibrium. For instance, if the benefits of a successful plot increase (i.e., such that payoff *b* increases), equation (2) implies that this has no impact on the equilibrium behavior, *p**, of the conspirator (although it seems plausible to expect that plotting becomes more likely). Although the conspirator will not change his behavior, equation (3) tells us that the prince will increase, *q**, the probability of control that characterizes the Nash equilibrium. If *q** remained the same, then the conspirator would clearly prefer "plot" to "not plot:" This is not consistent with an equilibrium, because *q** <1 is not best reply to "plot." As we have argued: There is no equilibrium in pure strategies in the game in Figure 1.

Similar, perhaps somewhat paradoxical, results can be derived for each cell of the matrix in Figure 1. For instance, does an increase of punishment, i.e., a decrease of *a*, reduce the probability of 'plotting?' This seems to be a highly relevant question with respect to condition (1). Obviously, it has no impact on *p**. Thus, in the equilibrium, the probability of 'plotting' does not react on punishment. However, since $\partial q*/\partial a > 0$, the probability of control will decrease if *a* decreases. This should reduce 1-*r*, the probability of "plot and fail." It seems there is a trade-off between 1-*r* and u_i(plot and fail) which is not captured by condition (1).

There are perhaps doubts about whether the mixed-strategy Nash equilibrium is an adequate instrument to analyze the game in Figure 1. For a game-theoretically trained reader it is straightforward that the maximin solution of this game implies the probabilities

$$p° = \frac{d-c}{a-b-c+d} \tag{4}$$

$$q° = \frac{\delta - \beta}{\alpha - \beta - \gamma + \delta} \tag{5}$$

Moreover, the reader can check that the payoffs of the players that concur with the maximin solution and the Nash equilibrium are identical, i.e., the game is "unprofitable."[18] Since $\partial p°/\partial a > 0$, an increase of punishment (i.e., a decrease of *a*) will result in a reduction of *p*° so that "plotting" becomes less likely. This seems to be a plausible reaction. However, if we

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[18] See Holler (1990) for these results and their interpretation as well as Holler and Klose-Ullmann (2008) for an application to Wallenstein's power problem. The "unprofitability" for this kind of game was already demonstrated by Aumann and Maschler (1972).

apply maximin to the prince then we see that an increase of the benefits of detecting a plot, α, will decrease his inclination to control. Note that $\partial q°/\partial\alpha < 0$. This appears to be less likely if we follow Machiavelli's reasoning.

6. The Machiavelli conspiracy

From Machiavelli's analysis follow four closely neighboring categories: successful conspiracy, unsuccessful conspiracy, staged conspiracy, and pretended conspiracy. They are characterized by an *active* proposition of conspiracy. But there are also *passive* and counterfactual versions of conspiracy: The possible victim imagines that there is a conspiracy and even reacts on this imagination although there is none.[19] Machiavelli did not elaborate on the passive version of conspiracy. If his analysis was meant to advise the conspirators and the prince then this omission is plausible. There is hardly anything to learn from it for 'people of action.' At the outset of this paper we raised the question why did Machiavelli write so extensively on conspiracy. Is it for the purpose of teaching the prince and his rivals to behave efficiently? Does he want to make sure that those who are virtuous, whether conspirators or princes, are successful and thereby improve the 'selection of the fittest' and thus contribute to the general welfare of mankind? Or is the *Il Principe* simply a "handbook for those who would acquire or increase their political power" (Gauss 1952: 8) and the extensive treatment of conspiracy in the *Discorsi* is a concomitant paper that was merely intended to demonstrate the competence of its author?

Machiavelli was intoxicated by the pleasure of thinking and writing, of delving into his own experience as high ranking Secretary to the Second Chancery of the Republic of Florence and special envoy to the King of France, to Rome and even to Emperor Maximilian, on the one hand, and a victim of conspiracy, on the other. During his lifetime Machiavelli was repeatedly accused of conspiracy. When, in 1512, the conspiracy of Pietropaolo Boscoli and Agostino Capponi against the lives of Giuliano

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[19]During World War I, there was the belief among English of a 'fifth column,' comprised of local civilians, mainly French or Belgian, who were eager to help the Germans make the English hurry to Dunkirk and leave the continent. This provoked a soldier of the London Regiment (Queen Victoria's Rifles) gun down a manifestly innocent old lady in Calais "in the belief that the Germans must be masters of disguise as well as of mobile warfare" and a group of Belgian farm laborers was shot in the field: they "were accused of mowing grass 'in the formation of an arrow' to guide Stuka pilots to British troop formations" (Ferguson 2006: 28). Every British soldier knew of the fifth column, however, to the Germans it was unknown. For further details, see Glyn Prysor (2005).

and Lorenzo de' Medici was discovered, Machiavelli was "…suspected of participation in this conspiracy, he was shut up in the prison of the Bargello, and had there to suffer the torture, the executioner having subjected him six times to the strappado. He was also kept for some days shackled, as we must presume from his writing that he had ′jesses′ on his legs; it being well known that that word signifies the leather straps that hold one of the claws of the falcons" (Detmold 1882: xxviii).

Obviously, Machiavelli was not involved in this conspiracy. Detmold (1882: xxviii) concludes that "the firm denial of Machiavelli under the pangs of torture ought certainly, with so honest and fearless a mind as his, to be taken for the truth, and should acquit him, not only of an unpatriotic act, but also of an act of folly in being one of a numerous body of conspirators, which folly no writer has ever exposed with greater clearness and more conclusive force of argument than himself." But there is a certain spiritual conspiracy in Machiavelli's writing. The language is very plain but people over the centuries have been seduced, again and again, to give highly controversial interpretations, many of which were not beneficial to Machiavelli's reputation. A careful reader of his writing will find that Machiavelli was a moral person: To him a murder is a murder even if the murderer is Romulus, the founding hero of Rome. He does not subscribe to an ethics which postulates "that the reason of state cannot be reduced to ordinary moral deliberation" (Bok 1982: 173).[20] However, he proposes all kinds of cruel policies for those who want to gain power and keep it, including conspiracy. He convincingly argues that in most cases these cruelties are necessary and cannot be avoided. Because they cannot be avoided they might be justified by their success, however, in Machiavelli's view this does not imply that they are inherently good.

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[20] To Sissela Bok (1982: 173), the 'reason of the state' concept implies that "…rulers may be justified when they lie, cheat, break promises, or even torture in order to further their state's welfare. And secrecy regarding such acts was often thought to be of the highest importance in furthering the designs of the state." It is the 'reason of state' that "…legitimates action on behalf of a state that would be immoral for private individuals."

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