Games of Simultaneity Played by Perspective Rational Players Further thoughts on Ambiguity

Christoph Güttner
Heidelberg
Germany

Abstract

The following article is based on Gordon Tullock´s (2005) analysis ofa coup d' état. Tullock pointed out that those who plan a coup are continually confronted with the challenge of communicating veiled in front of the ruling autocrat. Strategic interaction is therefore examined from a linguistic viewpoint. It presents the frame conditions that lead to ambiguous strategies as an optimal solution concept for rational actors. Formally, the situation can be seen as a conflictual environment, characterized by a cooperative and a non-cooperative fellow player. Plausible deniability plays an important role. The action set is based on a partition structure over different semantics to represent symbolic respectively ambiguous strategies. The two-level structure of the game, divided into a monitored frame game and a veiled language game, partly substitutes a probability distribution over ambiguous strategies. Games of Simultaneity can therefore be interpreted as a strategy interaction that takes place publicly and veiled at the same time.

Keywords: Games of Simultaneity, Ambiguous Strategies, Indirect Player, Perspective Rationality, Specific Communication Relation (SCR), Prisoner Dilemma, Coup Proofing Strategies, Speech Acts

1. Introduction

When actions do the talking, communication becomes a game. The following article provides a game theoretical method to describe metaphorical or symbolic actions respective speech acts by using a non-probabilistic approach of ambiguous strategies.

The objective of the current work is to describe the strategic use of metaphorical speech acts with a double meaning or double actions. Therefore, a nomological theory will be developed, that explains under which conditions ambiguity leads to an optimal solution for rational players (Bade 2013, Etner et al. 2012, Shepsley 1972, Ellsberg 1961). Clearly, metaphorical or indirect speech leads to an optimal solution only if the player have ambivalent goals. Ambivalent goals thereby are provoked by deontological and teleological considerations at the same time. Formally, conflicting environment, including a cooperative and a non-cooperative actor represents the required framework. An indirect player represents the role of the enforcing party who is indirectly incorporated into a two-person-game. The concept of plausible deniability will play a central role, as well as the change of meaning through contextual change (Pinker et al. 2007, Terkourafi 2011, 2014, Lee et al. 2010) in the frame game, and provides its monetary incentive structure. It is argued, that the role of the investigator within the PD game presents the ideal template for the indirect player, who has *"the power to interpret"* transferred information according to the concept of plausibility.

The first description of an indirect player associated with interaction theory was developed by Ervine Goffman (1959). He used the concept of a *virtual audience* to describe the circumstances that lead to symbolic interaction or metaphorical speech. Virtual audience describes a potential audience that means information can potentially be transferred to a third party. The term *indirect player* is derived from difference between direct and indirect speech acts. Indirect speech is thereby characterized by the transfer of verifiable direct (speech) acts to a person within another contextual situation. It is assumed that abstract expressions cannot be transferred between the two different contextual situations without any semantic distortion (Pinker et al. 2007). Given for example the metaphorical expression *jemanden hinter die Fichte führen (to pull wool over someone´s eyes),* as recently used from a journalist to describe publicly the behavior of the former German Federal President Wulff towards his former regional parliament. Like Pinker stated:

„This phenomenon (Innuendo and doublespeak) poses a theoretical puzzle. Indirect speech is inefficient, vulnerable to being misunderstood, and seemingly unnecessary" (Pinker, Novak, Lee 2007, p. 833)

Clearly, plausible deniability is a concept that requires deontological and teleological considerations. Ambivalent objectives associated with metaphorical or symbolic speech acts play no crucial within economic kind of discourse that is mainly based on a teleological underpinning. In politics or law, however, deontological considerations are inevitable. Deontology by this token means that actions are valued concerning its compliance of universal laws and regulations. Teleology instead values actions concerning the consequences they have. Many approaches like rule-utilitarianism, the concept self enforcement or optimal punishment strategies in repeated games have tried to merge the two viewpoints by describing a framework that substitutes deontological elements through a pure teleological respectively economic calculus. This economic calculus, however, requires well-defined reaction function of the fellow players that are often quite arbitrary and irrational. Further, contracts or property rights can only be established when either the fellow player or the enforcing party acts according to deontological claims.

Most current economic models assume that interaction on economic markets is characterized by unambiguous goals. In contrast, on political markets at least in autocratic regimes the rules are mostly given by unwritten laws and the approval of government decisions often leads to ambivalent objectives. According to Hobbes, most political economics t avoid dealing with ambiguity and blurred lines of legitimization by strictly focusing on actual costs of enforcement instead of words language in which laws are formulated. However, for the emergence of stable expectation and furthermore for the legitimization of law enforcement in constitutional states law and reaction function of the state must be known. Clearly, therefore new laws must be announced by using words and abstract expressions. As a matter of course an incentive system is required that assigns costs and utility to different kinds of speech acts. Typical applications for costly speech are criminals or revolutionaries when speech acts are recorded. Metaphorical and symbolic speech acts lead to the advantage of plausible deniability ex post. It follows the same logic that applies to the well-known moral principle of double-actions or externalities. Double actions have an intended and unintended consequences at the same time, as well as metaphorical expressions have more than one meaning respectively consequences.

The current approach examines metaphorical speech acts and differs therefore in two characteristics from traditional decision theory. First, the *telos teleiotation* or ultimate goal of the player consists explicitly of two interim goals that, in turn, can only be achieved by playing two different, but interrelated games simultaneously. The concept of simultaneity can be seen as mean-goal relationship that is exchangeable. It reflects the conflictual situation in which the players want to be understood and to be misunderstood at the same time. The role of the third player respectively audience is crucial for the rationalization of a specific communication system (CSC) (Kontodaimon et al. 2015).

Second, the signals or actions that players choose within the communication system are not conclusive information and do not produce transferable knowledge. Rather they are the inputs for a language game that is played simultaneously. Communication has an independent utility vector. A utility for the communication system is justified because the communication system is not just a mean, but also an independent goal. The utility for communication can also be seen as an explanatory variable that explains irrational behavior in respect to pure materialistic goals and constraints. For example Tullock pointed out that coups like the social order itself are public goods, and hence vulnerable to under-investment due to collective decisions and incentive problems. The goal for the revolutionary by Tullock is to maximize its material well-being, the revolution is therefore a mean or investment to achieve the higher goal. Here the establishment of a specific communication system is both, a mean for the revolution and hence well-being, as well as an independent goal within the framework of political competition.

This paper is structured as follows. Section 2 describes areas of application in more detail and develops the logic of indirect communication by the means of focal points. Section 3 provides examples of the strategic use of indirectness and the role of contextual information. Section 3.1 introduces and discusses Pinker's approach, where he shows how game theory can be used to illustrate the logic of indirect speech. Section 3.2 introduces to the concept of a specific communication system as a solution concept for a Speech Act Prisoner Dilemma. Section 4 develops Games of Simultaneity and describes formally the conjunction of two basic games. Section 5 discusses the results for a possible application within a Coup-Proofed Regime. Section 6 concludes and provides an outlook for further research.

2. Coup as an Application of Indirect Speech

The real life application of the model requires an incentive system for direct and indirect speech acts. Hence speech cannot be free like they are in free societies, but they have to be costly like often in authoritarian regimes. Concerning revolutions in authoritarian regimes Tullock analyses of regime change distinguishes between uprisings and coups. An uprising is a bottom-up movement that challenges the regime from outside, a coup instead describes the splitting between the government members or members of the winning coalition from inside (De Mesquita et al. 2003). The problem of communication for those who plan a coup describes Tullock as follows:

"The major problem this system raises is, of course, that false warnings of conspiracy are almost as convincing as genuine ones, since in most cases the conspiracy consists of little more than oral conversations among high-ranking officials (...)

It seems to me unlikely that true, long-lasting, and elaborate conspiracies have often contributed to the overthrow of a ruler. Such conspiracies are almost certain to be betrayed, and in any event can be controlled by the combination of eliminating prominent persons and "the changing of the guard". This is particularly so today when recording devices of various sort exists which can provide definite evidence of conspiracies, even if the conspiracies are entirely oral. The problem faced by the conspirators is not to keep the secret police from over hearing on of their discussions, but to prevent one of their own members from obtaining a permanent record of it which he can then use to betray the betrayers." (Tullock 2005 p. 176, 177)

Formally, the situation can be described as a game within a conflictual environment characterized by the cooperative and non-cooperative fellow player at the same time. Hence, the strategic advantage arises, when the ruling regime and the fellow revolutionary have different perspectives respectively interpretations of one metaphorical expression. Different interpretations are based on different background stories on which the listener indirectly refers to. Thomas C. Schelling (1960) firstly introduced the *modus operandi* of indirect communication into semi-formal game theory. Schelling proposed the concept of symmetric focal points, which present themselves as so obvious, that they are obvious for both. Formally, the map contains a variety of possible meeting points.

$$M = (m_1, \ldots, m_n); n \in N.$$

The possibility to identify certain focal point within each map leads effective coordination, even if direct communication is not applicable. The structure of indirect communication is described through an identical public signals (or maps) sent (or provided) to two or more players, which in turn have to find a symmetric meaning (or identical meeting points).Schelling gives two examples: one when the players have common interests and another one where they have slightly divergent interests. Schelling argues that in both situations mutual focal points can be found. In his example of the first situation, he describes a married couple that lost each other in a supermarket. Their preference is to find each other again. A paradoxical problem can arise, if the woman knows exactly, what her husband is doing, and in turn her husband knows exactly, what his wife is doing. Even if they decide simultaneously to look for the other in the exact same spot, the possibility to miss each other still exists.

To illustrate the second case with an example, we take two groups of pathfinders, who are walking through a forest. Both groups have an identical map that contains only one obvious meeting point, e.g. a hut. Further, the groups have the possibility to communicate via mobile phones and their main preference is to meet each other. Imagine now, one group is very close to the hut, the other is very far away. If the group, which is close to the hut, destroys the possibility of communication, the other group has to walk the whole way to the hut. Schelling shows with his example that the destruction of communication can yield to an advantage for one group. That case happens, if both have a common interest, which are still slightly different.

.

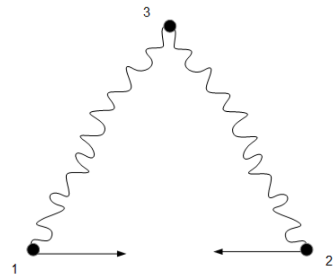


Figure 1: Structure of indirect communication

Figure 1 shows the underlying structure of indirect communication. The third, indirect player provides the signal X or the map M itself. The indirect player 3 is in-between the direct players, hence, s*he represents the state of *inter-esse*. Player 1 and 2 have to use the indirect player to communicate with each other.

Schelling's idea to use maps instead of direct communication provides a great illustration about how metaphorical or symbolic interaction works. What we need for the current linguistic approach is a back translation into a semantic map. More specific, instead of maps and meeting points words (syntax) and meaning (semantic) are used for indirect communication. The idea about how indirect speech can be used strategically will be developed in the next sections.

3. Strategic use of indirect speech

The challenge of rebels to establish a communication system within an autocratic regime requires that the content of verbal as well as written documents cannot be transferred to the ruling autocrat. More specific, if information will be transferred the intention to plan a coup must be plausible deniable. As Goffman (1959) and later Pinker (Pinker 2007) pointed out provides metaphorical or indirect speech a tool to remain plausible deniable in front of a *virtual audience*. They justify their claim by separating transferable information from pure contextual information.

A crucial feature of indirect speech is that it can be interpreted only in context…According to this hypothesis, the deniability is plausible to the virtual audience, even if it is not particularly plausible to the hearer…" (Pinker, Novak, Lee 2007, p. 837).

Using Schelling's illustration of maps and meetings points it becomes clearer that words only represent the maps but nor the meeting points. A specific communication system (SCS) therefore might provide a plausible meeting point for the non-cooperative third party and an additional specific meeting point for the cooperative fellow listener. Metaphorical speech within a two-person-interaction is therefore always irrational.

Interestingly, a related idea that shows the link between the third dimension and the rise of ambiguity can be found in arts. The analytic cubism, for example, uses the concept of ambiguity as a mean to avoid the loss of relevant background information, hidden in the third dimension. While the mathematical projection from a 3D space into a 2D plane causes essentially a loss of background information, cubic paintings, instead, preserves the background information by keeping the semantic layer of the original image unchanged. Hence, the objects of different picture planes can be represented in the same plane simultaneously. The essential consequence of the cubic representation is that within the 2D representation the objects get a double meaning. A well-known joke may illustrate the emergence of a specific communication system in the most adequate way.

A man goes to the butchery, points to the bacon and says:" The fish, please".
The butcher answers:" But this is a bacon"
Man:" I don´t care about the name of the fish".

Formally, the term "fish" (X) still has the plausible meaning "fish" ($\sigma_1 \in \Sigma_{plausible}$), but now it gets, in addition, the specific meaning "bacon" ($\sigma_2 \in \Sigma_{specific}$). Hence, within a SCS for the word fish holds true for: $\Sigma_{SCS} = \Sigma_{plausible} \cup \Sigma_{specific} = (\sigma_1, \sigma_2) = (fish, bacon)$. Plausibility (*Lat. plaudere: to agree, applaud*) in general is defined as the prevailing opinion within the "political context". Normative, plausibility describes a social agreement about the assignment of meaning within a speech community that is unanimous accepted. A common assignment of meaning evokes stability and order within each language community. Still, an individual or specific background story is not prohibited, even if it enables the actor to exchange information without being detected.

The probably most-know illustrations for indirect speech and the identification of a common background story can be found within Shakespeare´s dramas: Hamlet for example used a public theater play to convict his uncle Constantine by adding a private background story. To avoid a direct confrontation with Constantine, Hamlet hired professional actors to perform a public theater play that, in turn, reflects the progression of Constantine`s presumed crime. Hamlets objective was to observe the reaction of the presumed king's murder towards the performance. His advantage is, that the his suspicion remains veiled in front of the audience and it would remain veiled in front of Constantine if he has nothing to do with the murder.

Pinker's Example

In their article about the logic of indirect speech, Pinker, Novak, and Lee (2007) develop a way to represent the strategic use of indirectness by the means of a game theoretical examination (see also Goffman 1959, Schelling 1960). They showed, under which conditions, indirect speech leads to the optimal solution for rational actors. To illustrate their idea, they used an example taken from the movie Fargo, in which the actor tries to implicate a bribe within a traffic control. Instead of directly proposing: *"I give you 50 $ and you let me go"*, he circumscribes his request by hint and suggestion: *"So maybe the best thing would be to take care of it here"* .According to the authors, an implicate bribe yields an strategic advantage, because a cooperative listener can accept the request, while a non-cooperative listener cannot oppose against the bribe, until s*he has enough evidence. The gap between the two non-linear reaction functions explains the advantage (see Appendix). A similar concept, called Tolerance Span, was also developed by Stefan Voigt (1999) within his paper about an Implicit Constitutional Change . He argues that a change of constitution can appear without an actual change of the written document.

	Dishonest officer	**Hones officer**
Don´t Bribe	A (Traffic ticket)	A (Traffic ticket)
Bribe	B (Go free)	C (Arrest for bribery)
Implicate bribe	B (Go free)	A (Traffic Ticket)

Table 1: Implicate bribe from Pinker et. al. 2007

Given the relation B > A > C, it is easy to see that the implicate bribe represents the dominant strategy for the driver. The concept of `Plausible Deniability` explains the strategic advantage of indirect speech. A law system, where doubt benefits the accused, is indisputable a required condition for the strategic advantage of indirectness.

Specific and plausible speech acts

Metaphorical and indirect communication can be efficient in regard to the transfer of information, as well as in regard to veiling information towards a third party, if and only if a specific background exists. The rebels, as Tullock mentioned, face the problem that their words can be recorded and transferred to the ruling party. (Pinker 2007, p. 454) provides a possible solution for the problem:

"The speaker and hearer may have no doubt about the intent of an indirect speech act because they know the background story and can witness each other´s bearing and mannerisms. But an eavesdropper or a third party, learning about the event from a distance, lacks this information, and has only the actual words to go on."

Contextual information by this token are information that are not transferable respectively information that are received only by further thoughts of the listener. The knowledge of the circumstances, which according to Hayek (1975) does not exist in a concentrated or integrated form is therefore a pure problem of transferring knowledge via the medium of language. Political satire for example uses indirect reference and analogies to provoke intentionally ambivalence. As Lakoff (1980) stated the essence of a metaphor is to understand one thing by the terms of another. The paradoxical objective of using the stated rhetorical figures is saying something without having said it literally. A required condition for understanding is that what is said literally is embedded in an underlying story, which is mutual knowledge. Hence, satire uses a common reference, creates an analogy, but leaves it to the mind of the listener to create the connection. Hence, satire requires a back – translation into the meant reality (Gaier 1967). The back-translation is based on Meta–textual references, while first, the combination of the satirical text and the reader´s imaginary world leads to the line crossing impact of critique.

A nice example that illustrates the difference between abstract or universal knowledge and contextual knowledge can be found in the dialogue between Sherlock Holmes and Dr. Watson, while they went camping and wake up at night:

Holmes:" Watson look up at the sky and tell me what you see"
Dr. Watson:" I see millions of millions of stars, Holmes."
Holmes:" And what do you deduce from that?"
Dr. Watson :" Well, astronomical, it tells me that there are millions of galaxies, and potentially billions of planets. Astrological, I observe that Saturn is in Leo. Horological, I deduce, that the time is approximately quarter past three. Meteorological, I suspect, that we will have beautiful weather tomorrow. Theological, I can see that god is all powerful and we are small and insignificant part of the universe. What does it tell you, Holmes?"
Holmes:" Watson you idiot, someone has stolen our tent."

The dialogue shows how useless abstract or universal knowledge might be within the particular circumstances. To use the information of the particular circumstances statically it is important that the abstract knowledge that the third party poses is commonly known or if doubt benefits the accused. To illustrate the problem that the state faces with rebels or criminals, take for example a mafia boss, who tells a fellow member to shoot somebody. If the police has recorded the order, it could surely be used against him. But what, if he orders to shoot, while watching a football match? As Tullock pointed out false and genuine accusations are difficult to distinguish. Furthermore if it is in self interest of rebels to send plausible signals of loyalty rather more than those that are actual loyal.

The interim goal for rebels is therefore to generate a specific communication system that allows them to understand metaphorical expression in a different way than the ruling autocrat. Furthermore, they have to take into account what the ruling autocrat expects according to the abstract knowledge s*he has about the situation. The problem of the autocrat instead is if s*he expects a coup also the actions and speech acts of those who are loyal can be interpreted as a revolt.

On the basis of speech acts we can derive a the Speech Act Prisoner Dilemma (SAPD). During the last decades of game theoretical research the Paradox of Cooperation, associated with the PD-games, constitutes the most discussed problem of non-cooperative game theory (Peterson 2015, Edgar 2002). The game is applied to situations that prevail trust and suspicion, cooperation and conflict, temptation and commitment like promise and threat.

Schelling (1960) mentioned already that the evolution of language did not provide an adequate word for the name of the players within games of mixed motives. Neither partner nor opponent describes adequately the relation between them.

The SAPD emerges regarding the efficient transfer of information (direct speech), and the protection against potential transfer of variable evidence to a third party (metaphorical speech). Metaphorical or double-speech is vulnerable to being misunderstood. Still, the incentive system turns out to be PD – Game, in which metaphorical speech is the dominant strategy.

Player2 **Player 1**	**Direct \ verifiable speech act**	**Indirect \ deniable speech act (metaphorical)**
Direct \ verifiable speech act	3/3	1/4
Indirect \ deniable speech act (metaphorical)	4/1	2/2

Table 2: Speech Acts Dilemma

The situation, however, changes when the actors have a common background and are able to to understand metaphorical speech acts without any loss of efficiency in information. The advantage of the SAPD is that it can be plausible justified that a metaphorical speech does not necessarily equals defection. The difference between a direct or indirect speech acts is only understandable in regard to the third indirect actor. Taking into account that the third player records the interactions the plausible consequence is that only metaphors (maps) are exchanged, instead of direct speech (meeting point). This, however, does not mean that the interaction ends after the maps are exchanged. The exchange of maps just provokes a second game within the first game. The complete interaction is represented within Games of Simultaneity that are developed in the next section.

4. Games of Simultaneity

Simultaneity matters in general when actors have ambivalent goals. Ambivalent goals arise when two viewpoints coexists next to each other. For the current application the coexistence of two viewpoints provokes a an exchangeable mean- goal relationship. A possible permutation in the mean-goal relationship means that the mean is itself an independent goal. Formally, the players have two independent utility vectors that cannot be merged. It was argued before that one viewpoint can be seen as a teleological the other as a deontological. That of course does not hold anymore when we assume a utility vector for communication. Through the communication utility a pure teleological viewpoint is applicable, but to explain why a utility vector for communication is plausible requires a deontological viewpoint.

The rebels in the current example have on the one hand the goal to plan a coup and communication represents the mean to do it. On the other hand it is assumed that the rebels have the goal to communicate and the coup planning represents the mean to do it. Communication is therefore neither impossible nor cheap like assumed in the traditional PD-Game. For reason of simplicity we can assume a monetary pay-off vector and a pay-off vector for communication utility. The monetary pay-off vector constitutes the frame game and is provided by the regime, the communications utility constitutes the simultaneous language game.

Consequently, Games of Simultaneity have an actions set that contains speech acts with a double meaning. The area of application for Games of Simultaneity arises in the presence of a cooperative and non-cooperative fellow player and furthermore when the minimax strategy against the non-cooperative player (metaphorical expression) does not contradict cooperation with the cooperative player (communication and coup).

The structure of the current Game of Simultaneity therefore apply to situation when the political incentive structure in the frame game does not fully reflect the individual incentives. The reason for the distortion in preference is the use of political force that is mainly excluded from economic markets. The political frame game has therefore the structure of an slightly modified PD-Game. The political force is represented through the indirect actor who can be seen as the prison guard. In contrast to the traditional PD-narrative, however, are all three players in the same room. Consequently, the “prisoner” can talk to each other, but the conversation is recorded by the guard and might be used against them. The objective of the “prisoner” is to get rid off the guard, however, under the constraint, that the other prisoner will support the coup. The optimal communication strategy is therefore to plan the coup, while staying plausible deniable towards the prisoner guard at the same time. Or like (Schelling 1960, p. 57) stated in a different but still applicable situation:

“Finding the key, or rather finding a key becomes the key - any key that is mutually recognized as the key becomes the key - may depend on imagination more than on logic.”

Hence, besides ambivalent monetary incentive an additional form of utility must be explain symbolic behavior in political competition. The prisoner guard provides monetary incentives for the prisoner for not planning a coup, these incentives, however, does not reflect the true individual incentives. This additional utility is called here a communication utility based mutual deontological perceptions that a natural obligation exists to revolt.
Metaphorical speech acts or double actions can lead to optimal solution for rational actors if they are understood by the cooperative fellow player, and are misunderstood by the third non-cooperative player.

A problem here arises with respect to the nature of language. Language is always an abstraction of the real world. Metaphor or direct speech depends only on plausible interpretation. Hence, the differentiation between metaphorical and direct speech acts must be specified. The relevant difference is that a metaphorical expression will be interpreted different from the cooperative and non-cooperative fellow player, while the direct speech act will be interpreted equally from all players. In Schelling's sense both direct and metaphorical expressions are maps, while one map has only one focal point for all players, the metaphorical map instead has a plausible focal point for all, but additional a specific focal point for only the direct players. The existence of the additional focal point is justified by specific - story or a CSC that is only available for those who share common specific experience.

To differ formally between a direct interpretation derived from contextual information and an indirect interpretations derived from transferred information, we need an indirect actor (IA) and a direct actor (I). The resulting language game and second the Game of Simultaneity containing a the frame game and language game are developed formally in the next section.

The Model

To use Schelling´s idea for the formal description of indirect communication, the map has to be translated into concept of a semantic map. Formally, the knowledge about the actual equality of the maps is no longer common knowledge, but requires further consideration. To translate his illustration into the formal representation of actions we get

$$m_i = \{m_i^{sem} \mid f(m_{ij}) = m_j^{sem}\},$$

whereby $m_i$describes the map and m^{sem} its semantic, hence the possible meeting points. The contextual mapping $f: m \rightarrow m_{sem}$ describes how many possible meeting points exist for each map, whereby bijective mapping assigns one element of the source to exactly one element in the image set $f_{bi}: m \rightarrow (m_0^{sem})$. An injective mapping assigns one element of the source (map) to a variety of elements in the images set (meeting points) $f_{inj}: m \rightarrow (m_1^{sem},..., m_n^{sem})$. The injective mapping therefore corresponds to clear and unequivocal speech acts, the injective mapping corresponds to metaphorical or symbolic speech acts.

Further, to translate indirect communication into a formal, game-theoretical approach, the preferences and constraints for each player must be clearly defined. Therefore, the preference for communication is axiomatically given and corresponds to a utility vector for communication. Later we will see that within Games of Simultaneity, the utility of communication is required, so that a rational actor can achieve the Pareto-optimal component of monetary pay-off.

Language Game

Let now LG{Σ,Π, I, IP} be a two person symmetric language game in normal form with the strategy set Σ, the set of pay-off vectors Π, the set of direct players I, and the indirect player IP, who provides identical public signal X for the players.

Set of action Σ

The strategy set $\Sigma = \Sigma_i \times \Sigma_j \forall i, j \in I$ describes the combination of both individual action sets. The individual action set contains all individual possible interpretations: $\sigma_i = \{\sigma_i^{sem} \mid f(X_{ij}) = \sigma_j^{sem}\}$, that maps a public signal X into the set of possible meanings. It is assumed that the context of the original public signal is unknown to the players; hence, they are free or rather forced to choose between varieties of possible meanings.

A problem here arises with respect to common knowledge about the action set of each fellow player. Still, each action set must be commonly known to constitute a formal game. Furthermore, if one or both players have only one unique interpretation, the analyzed decision making situation no longer represents a game, but a pure maximization problem. Hence, at least two possible interpretations are formally required for a game theoretical representation. Consequently, to make sure that all formal requirements are fulfilled, the concept of (strict) perspective rationality becomes a necessary condition.

Definition Perspective Rationality: Perspective rationality describes the property of a rational actor to assign at least more than one possible interpretation to each signal. Hence, for the number of elements within its action set Σ_i^n holds true for $n \geq 2$.

Notice, however, that perspective rationality is not yet a sufficient condition for a well-defined symmetric game. Yet, because there still exists the possibility that the player assign completely different interpretations to the public signal. In that case, the outcome of the game is given by zero from the very beginning of the game. To avoid the case of a zero-game a stricter definition of perspective rationality is introduced.

Strict Perspective Rationality (SPR): Strict perspective rationality describes the property of a player to assign all possible meanings to each received signal. It holds $SPR: \sigma \rightarrow \sigma_i^{sem}; \forall i \in \Omega$, whereby Ωdescribes the potential space for interpretations that is identical for all players.

It follows for games with two players that $PR_1(X) = PR_2(X) = (\sigma_1^{sem}, \ldots, \sigma_m^{sem})_1 = (\sigma_1^{sem}, \ldots, \sigma_n^{sem})_2$, hence $n = m \in N$, whereby $PR_1$and PR_2describe the mapping rule for strict perspective rational players 1 and 2. The logic of strict perspective rationality is derived from the fact that if and only if both players assign all possible meanings, they inevitably assign the same meanings to the public signal. Hence, their action sets are identical and the utility vector is well defined for each strategy before the players try to maximize their outcome. When the players have assigned all possible meanings, the choice between the different interpretations is based on a strictly rational decision.

Set of player I

The game contains two players $I = (1,2)$ and one additional indirect player, who provides the public signal σ. Both actual players are strict perspective rational. Further, they possess common knowledge about the structure of the game, including each pay-offs vector and each the action set. The common knowledge about the action set is derived from the common knowledge about perspective rationality. Formally, common knowledge is described as concept of knowledge, for which holds true: A knows X and B knows X, further A knows that B knows X and B knows that A know X, further A knows that B knows that A knows X etc. In other words, both know X and both know Y whereby Y means, that both know that both know X. A slightly different concept of knowledge is mutual knowledge. Mutual knowledge describes knowledge, for which holds true A knows X and B knows X, but neither A nor B know, if the other knows X. Hence, the assumption of mutual knowledge would be sufficient to define the game.

Set of pay-off vectors*Π*

The pay-off vectors $\pi_i \in \Pi \forall i \in I$ generally reflects the preferences of the player. It is assumed that both players have a preference for communication, hence, both receive a communication utility, if actual communication takes place. Communication (Lat: commūnicāre, meaning "to share in common“). Complete symmetry in communication is defined by symmetry in meaning and in the correspondent amount of utility. For logical consistency, the concept of visible interpretations is introduced. The concept can be applied, when interpretation are observable, but not verifiable. Hence, the observed interpretations cannot be used as evidence, when transferred to a third party. Alternatively, the interpretation the utility of C can also be illustrated by the means of a vocabulary. Every time, when the players are able to assign an identical meaning to a public signal, they create a “new” word. The utility of this? word is surely indisputable in respect to communication. Later we will see that the possible transfer of information to a third party within the “plausible context” plays a crucial role for the optimal choice of strategies. Notice, that the concept of visible interpretation or creation of words differs from cheap talk, if the players have a preference for communication. The preference for communication leads to following pay-off vectors.

Communication utility: Each pay-off vector $\pi_i \in \Pi; \forall i \in I = (1,2)$ leads to a positive amount
C > 0 of utility, if and only if both player have identical interpretations. Hence, the positive utility is located exclusively on the main diagonal. It holds:

$\pi_{ij}(\sigma_i, \sigma_{-j}) = (C/C)$ if $i = -j$
$\pi_{ij}(\sigma_i, \sigma_{-j}) = (0/0)$ if $i \neq -j$

The same pay-off represented for each individual player leads to $\pi_i = C \times DiagE^{n \times n} = \delta_{ij}C$ with $i, j \leq n \in N$ and the expected utility for each player is $EU(\sigma_i) = C/n$. The expected utility $E(u) = C/n$ increases with the amount of utility C and decreases with the number of possible interpretations n. When the number of possible meanings goes towards infinity ($\lim n \to \infty$) the expected utility of the game goes towards zero. An infinite number of possible interpretation is assumed in the absent of any context. However, due to the cognitive limitation of the recipient horizon, a limited number of n is more realistic. Table 3 shows an example with n = 4 possible interpretations of the public signal X.

σ: Public Signal	**player 2** / **player 1**	$\boldsymbol{x_1}$	$\boldsymbol{\sigma_2^{sem}}$	$\boldsymbol{\sigma_3^{sem}}$	$\boldsymbol{\sigma_4^{sem}}$
	σ_1^{sem}	C/C	0/0	0/0	0/0
	σ_2^{sem}	0/0	C/C	0/0	0/0
	σ_3^{sem}	0/0	0/0	C/C	0/0
	σ_4^{sem}	0/0	0/0	0/0	C/C

Table 3: Symmetric Language Game

Stages of decision making and Nash - Equilibrium

The outcome of the game depends on the action of the fellow player and its own The equilibrium strategy follows the logic of identifying focal points. Like in classical game theory, it will be differentiated between ex ante, ex interim and ex post states of decision. Ex ante, the player know the structure of game, the range of possible interpretations n, as well as the amount of utility they achieve with identical interpretations. Ex post they know if the game was successful respectively if identical interpretations could be achieved. Ex interim the interesting part of the decision process takes place. When the interpretation takes place at the same time, no one can have information about decision of the fellow player (static). If one player acts first and the other reacts, we refer to a sequential or dynamic decision process. Within a game of pure coordination, it is easy to see that a sequential decision process leads to an optimal solution for both players. Notice that the second mover would agree to a sequential decision process, even when s*he can never decide about the meaning of each signal. This result is derived from the fact that an isolated language game has no context , hence, only identical actions within the game matter. In other words, as long as no frame game is defined in which the meaning of the interpretation matters, the choice between equilibria is irrelevant. Hence, the language game corresponds to a simple coordination game with pure strategies, as long as the players are not involved in other games at the same time. It is characterized by n strict Nash-equilibria without any dominant strategy. Given the interpretation of the other player, an identical interpretation always leads to a stable equilibrium with: $\pi_i^1 = \pi_j^2 = C$. The set of all equilibrium strategies for player 1 and 2 is therefore $\Sigma_{opt}^{1,2} = \sigma_1^{opt} \times \sigma_{-2}^{opt}$. Formally, it can be stated that the optimal strategy for player 1 is σ_i^{sem}, if player 2 plays σ_{-i}^{sem}. Due to reasons of symmetry $\pi(\sigma_i^{opt}, \sigma_{-i}) > \pi(\sigma_i^{opt}, \sigma_{-j})$, the same holds true for player 2.

Concerning Pareto-optimality within the stated language game, it is easy to see that every Nash-Equilibrium is Pareto-efficient. It holds $\pi(\sigma^{opt}) \geq \pi(\sigma)$. The result is derived from the equal distribution of the utility for each interpretation$\pi(\sigma^{opt}) = C \geq \pi(\sigma_i) \forall i < n \in N$.

When this language game is played with an intention to change the output in another game, that may take place simultaneously, the symmetry of communication can be disturbed strategically. The simple assumption of the absence of a strategic considerations can only be justified, if the objective of communication is independent from the objective that is talked about (Rawls 1970, Harshanyi 1955).

In the next section, the focus will be on the consequences, evoked through the repetition of static basic language game that can be described by the emergence of a common vocabulary or rather . treasure of words.

Repeated Language Games

For repeated language game, the existence of symbolic convergence or learning function is assumed. The crucial feature of the dynamic learning function is represented through a communication capital $CC(h_t(\sigma - i, \sigma_{-j}))$, whereby $h(\sigma - i, \sigma_{-j})$describes the history of the game. The underlying idea is that a language game can not repeat itself, because the former round essentially changes the current situation.

In this approach, it is assumed that the utility for each former match increases the utility for the next match. This is justified through reasons of combinatorics. Take for example two players, who played already two rounds with public signals "Nike" and "Apple". Further, they have agreed that "Nike" stands for Just do it and "Apple" stands for think different. Now they can use the "word" isolated, but they can also combine them like "Nike-Apple". Hence, the marginal utility of every additional "word" increases the communication utility. It can be referred to it as an endogenous increase of CC that is generated, while playing the game. To formalize the idea of a communication capital $CC(h_t(\sigma - i, \sigma_{-j}))$, let $h - t(\sigma - i, \sigma_{-i}) = id$ be the number of identical assignments of meaning during the former rounds. Hence, the dynamic utility $CC(t)$in round t describes the utility derived from the words accumulated from round 1 till round t.

Communication Capital: Communication Capital (CC) describes the accumulation of a specific communication over time. It is generated through the ability to combine specific semantics.

$CC(h(\sigma - i, \sigma_{-j})) = C \cdot h(\sigma_i, \sigma_{-i}) = C \cdot id,$

whereas $id \in T$ describes the number of identical assignments of individual meaning that took place during the history of the game: $h(\sigma_i, \sigma - i) = id = \sum_{i,j=1}^{t} \quad \delta_{ij}(\sigma_i \times \sigma_j)$.

Apart from that, repeated language games follow the same logic like one-shot games. The assumption of mutual knowledge about the amount of communication utility becomes surely more plausible within repeated games. Furthermore, if the repeated game has perfect recall in its true sense of memory, it is plausible to assume that the experience from the former rounds increases the utility in the next round.

It was shown that the "Context-Free Game" enables the player to assign a limitless number of meaning to each signal. Further, it was shown that a quasi-limitless number of meaning leads to an expected communication utility of 0 (zero). Later we see that a communication utility of zero or cheap talk will fail to overcome the prisoner dilemma. Still, the concept of strict perspective rationality made it possible to simplify the problem of meaning and describe a formal game. Next sections introduces the strategic use of divergent interpretations.

PD-Frame game and simultaneous language game

Let $\tilde{G}(\tilde{\Sigma}, \tilde{\Pi}, \tilde{I}, IP)$ be a game in normal form with two players, where $\Sigma = \Sigma_i \times \Sigma_j$ presents the set of all strategy combinations, $\tilde{\Pi}$the set of pay-off-vectors, I= (1, 2) the set of direct players, and IP the indirect player as a partial constraint to the interaction. The indirect player is used to constitute $\widetilde{PD}(\tilde{\Sigma}, \tilde{\Pi}, \tilde{I}, IP)$, that represents the frame game played from the indirect perspective. From direct perspective, however, a combination of the frame game and the language game $\widetilde{LG}(\tilde{\Sigma}, \tilde{\Pi}, \tilde{I}, IP)$ is played. The indirect player observes the frame game, interprets and judges the actions of the players, and provides the monetary pay-offs accordingly. At the same time the indirect player is unaware about the language game. The crucial assumption of that approach is that direct communication is interdicted, while indirect communication is possible under more difficult conditions.

Set of players $\tilde{I}$

The set of direct players I = (1, 2) contains the formal player, whereby each player has its own context function I(s). The players have common knowledge about plausibility and therefore about the reaction function of the indirect player. The indirect player (IP) only constitutes the structure of the frame game that is characterized by choosing the plausible meaning out of each action IP(p). The concept of the indirect player does not correspond to a formal player, but a framework condition for the direct players, that partly constraints their interaction. Hence, the indirect player plays no other role in the formal description than to justify the additional perspective. Its relation to the direct player is assumed to be a superior-inferior relation. Alternative names for the indirect actor could be (virtual) audience.

The direct player's preference is to maximize his total pay-off vector, including the monetary and non-monetary component. The structure of the game is common knowledge between the direct player, including the pay-off and the action sets of the fellow player. Further, the players are perspective ration and have common knowledge in form of information, interpretation and judgment about the applied concept of plausibility. Further, the players know, that they are confronted with a conflictual environment. Hence, the optimal solution is to play an ambiguous strategy, which includes a plausible and specific meaning. Their objective is thereby to veil the specific meaning or make them plausible deniable.

Action set $\tilde{\Sigma}$

The strategy set $\Sigma = \Sigma_i \times \Sigma_j \forall i, j \in I$ describes the combination of both individual action sets. The individual actions set contains $\sigma_i = \{\sigma_i^{sem} \mid f(\sigma_{ij}) = \sigma_j^{sem}\}$, whereby σ^{sem} stands for the semantic or meaning of $\sigma$and $f: \sigma \rightarrow \sigma_{sem}$ describes a context mapping. The plausible context is derived from the context mapping f_1. It maps, according to the interpretation of the indirect player, each action of the direct player into its plausible meaning. For the current case of a type II PD-game, it turns out. $C = \{\sigma_i^{sem} \mid f_1(C_{ij}) = \sigma_j^{sem}\} = c_{plausible}$ and $D = \{\sigma_i^{sem} \mid f_1(D_{ij}) = \sigma_j^{sem}\} = d_{plausible}$. In other words, the plausible interpretation here contains only one interpretation, hence, the action set in the frame game turns out to be $\Sigma_{frame}^1 = (c, d)$. The individual context is derived from the context mapping f_2. It maps, according to the interpretation of the indirect player, each action of the direct player into its plausible meaning. It turns out that $C = \{\sigma_i^{sem} \mid f_2(C_{ij}) = \sigma_j^{sem}\} = (c_{plausible}, c_{specific})$ and. $D = \{\sigma_i^{sem} \mid f_2(D_{ij}) = \sigma_j^{sem}\} = (d_{plausible}, d_{specific})$. The observable actions set is therefore:

for the indirect player: $IP(p) = (c_{pausible}, d_{plasuible})$

for the direct player:$I(s) = (c_{pausible}, c_{specific}, d_{plausible}, d_{specific})$

These observable actions differ because of different context function of the player. The performance contains two interpretations the plausible and specific one. More general the action set in the actual game turns out to: $\Sigma^2_{frame} = (c_{1,}c_{2,}d_{3,}d_4)$ for the direct player. The general context or context free state, is derived from the context mapping f_3. It maps, according to the interpretation of the indirect players, each action of the direct player into its plausible meaning. It turns out, that $C = \{\sigma_i^{sem} \mid f_3(C_{ij}) = \sigma_j^{sem}\} = (c_1, \ldots c_m)$ and $D = \{\sigma_i^{sem} \mid f_3(D_{ij}) = \sigma_j^{sem}\} = (\widetilde{d_{m+1}}, \ldots, \widetilde{d_{m+n}})$. The performance then has n+m possible meanings and the action turns out to be $\Sigma^3_{frame} = (\widetilde{c_{(1)}}, \ldots, \widetilde{c_{(m)}}, \widetilde{d_{m+1}}, \ldots, \widetilde{d_{n+m}})$.

Set of pay-off vectors $\widetilde{\Pi}$

The pay-off-vector $\widetilde{\pi_\iota} \in \widetilde{\Pi_\iota}$consists of a monetary and non-monetary component, whereby the $\tilde{\pi} = \pi_m + \pi_{nm}$ monetary component $\pi_m = (\upsilon, \varphi, \chi, \psi)$ with$\chi > \upsilon > \psi > \varphi$ is provided by the indirect player, while the non-monetary component $\pi_{nm} = \delta_{ij}C; i,j \in N$ is generated within the language game. The Kronecker Delta $\delta_{ij} = 1$ describes thereby the simple main diagonal in pay-off-matrix. The pay-off vectors represented in the most general form turn out to: $\widetilde{\pi_1} = \upsilon + \delta_{ij}C$;for, $(\sigma_i \in \tilde{C}, \sigma_{-j} \in \tilde{C}); i,j < m \widetilde{\pi_2} = \varphi$; for $(\sigma_i \in \tilde{C}, \sigma_{-j} \in \widetilde{D}); i \leq m, (n+m) \geq j > m$, $\widetilde{\pi_3} = \chi$; for $(\sigma_i \in \widetilde{D}, \sigma_{-j} \in C); i > m, (n+m) \geq j \geq m$, $\widetilde{\pi_4} = \psi + \delta_{ij}C$; for $(\sigma_i \in \widetilde{D}, \sigma_{-j} \in \widetilde{D}); (m+n) > i,j > m$, whereby the index m describes the number of possible meanings for C and n the number possible meanings for D.

Nash-equilibria

The game has no dominate strategy any more. It exists a cooperation threshold C* with $C > \chi - \upsilon$. The number of Nash-equilibria depends on C. If the C is less than C* the number of Nash-equilibria turns out to be n, because each risk-neutral player decides rationally for a strategy $\sigma_i \in \widetilde{D}$. That, in turn, provokes, due to the symmetry of the game, the resulting Nash-Equilibrium: $\pi(\sigma_i^{opt}, \sigma_{-i}) = (\widetilde{d_\iota}, \widetilde{d_{-\iota}}) > \pi(\sigma_i, \sigma_j); i > m$, with $\sigma_{i,-i}^{opt} \in \widetilde{D}; i = (-i) > m$. The optimal strategy combination turns out to be $\Sigma^{opt} = \sigma_1^{opt} \times \sigma_2^{opt} = d_i \times d_{-j}; i = j > m$ and the corresponding utility $\pi_1 = \pi_2 = (\psi + C)$.

However, if C is larger than C*, the number of Nash-equilibria turns out to be (n+m). For each Nash-equilibria holds true $\pi(\sigma_i^{opt}, \sigma_{-i}) > \pi(\sigma_i, \sigma_{-j})$. Hence, the Nash-Equilibrium lies on the main diagonal., however, the Pareto-optimal pay-off can only be achieved, if $\sigma_i \in \tilde{C}$with the corresponding Nash-Equilibrium$\pi(\sigma_i^{op}, \sigma_{-i}) = (\widetilde{c_\iota}, \widetilde{c_{-\iota}}) > \pi(\sigma_i, \sigma_j); i \leq m$and the corresponding pay-off $\pi_1 = \pi_2 = (\upsilon + C)$.

Example 1: One shot game

Given context f_3, which provokes that the players assign the following meaning $C = (c_{plausible}, c_{specific}) = (c_{1,}c_2)$ and $D = (d_{plasuible}, d_{specific}) = (d_{3,}d_4)$. Let the monetary pay-off $\pi_m = (3, -4, 4, -1)$ and the non-monetary $\pi_{ep} = C_{ij} f\ddot{u}r\, i = j$ .The utility vector is given by $\pi_i = ((3+C), 3, -4, -4, 3, (3+C) - 4, -4, 4, 4, (-1+C), -1, 4, 4, -1(-1+C)) \forall i \in I$, while C is simply added to the main diagonal (table 4). The cooperation threshold is given by C*=4-3=1. If C is less than 1, it follows that the players surely defect. If C is larger than 1, their optimal strategy combination is to cooperate. The game for which 1<C<5 is held, is often referred as a stag hunt.

Player 2 / Player 1		$\tilde{C}$		$\widetilde{D}$	
		$\widetilde{c_1}$	$\widetilde{c_2}$	$\widetilde{d_3}$	$\widetilde{d_4}$
$\tilde{C}$	$\widetilde{c_1}$	(3/3)+ C	(3/3)	-4/4	-4/4
	$\widetilde{c_2}$	(3/3)	(3/3)+ C	-4/4	-4/4
$\widetilde{D}$	$\widetilde{d_3}$	4/-4	4/-4	(-1/-1) +C	-1-1
	$\widetilde{d_4}$	4/-4	4/-4	-1/-1	(-1/-1) +C

Table 4: Games of Simultaneity: Pay-Off Matrix

Example 2: Repeated Game

Let $\widetilde{RCG}(\tilde{\Sigma}, \tilde{\Pi}, \tilde{I}, IP)$be a quasi- repetition of the game above. Notice, that a finite repeated PD-game would lead to the “chain store paradox”, that describes the fact that rational, forward looking actors can not cooperate from the first round on. The chain store paradox evokes, because the players anticipate, that both players will defect in the last round and hence, in the round before the last round, and hence, in round before the round before the last round, and so on (Selten 1978). However, the utility in a repeated language game is given by the communication capital $\pi_{nm}(t) = \delta_{ij}CC(t) = \delta_{ij}C \cdot id(t)$ with $id = \sum_{i,j=1}^{t} \quad \delta_{ij}$. To illustrated the dynamics that a underlying language game can evoke, let $\pi_m = (\upsilon, \varphi, \chi, \psi) = (8, -40, 40, -4)$be the monetary pay-off of each round. The corresponding utility vector is then given by

$$\pi_i = ((8 + CC(t)), 8, -40, -40, 8, (8 + CC(t)) - 40, -40, 40, 40,$$
$$(-4 + CC(t)), -40, 40, 40, -4(-4 + CC(t)))\forall i \in I$$

The punishment and reward have increased dramatically compared to the one shot game above. Still, Nash-Equilibria will change after a while. The cooperation threshold CC* turns out to be CC< 40-8=32. Let for example C be 7 and assume for reasons of simplicity that a match in meaning takes place each round$id = t$. Then it turns out that

$CC(t) = C \cdot id = C \cdot t$ hence, $t = \frac{(\chi - \upsilon)}{C} = \frac{(40-8)}{7} = \frac{32}{7} \approx 4.57$

Now it can be easily shown that during the first 5 rounds the optimal strategy combination is given by $\pi(\sigma_i^{opt}, \sigma_{-i}) = (\tilde{d_\iota}, \widetilde{d_{-\iota}}) > \pi(\sigma_i, \sigma_j); i > m$, with the corresponding pay-off $\pi_1(t) = \pi_2(t) = (-4) + CC(t)$., however, from round 5 on the optimal strategy combination for rational players is given by $\pi(\sigma_i^{op}, \sigma_{-i}) = (\tilde{c_\iota}, \widetilde{c_{-\iota}}) > \pi(\sigma_i, \sigma_j); i \leq m$and the corresponding pay-off $\pi_1(t) = \pi_2(t) = 8 + CC(t)$.

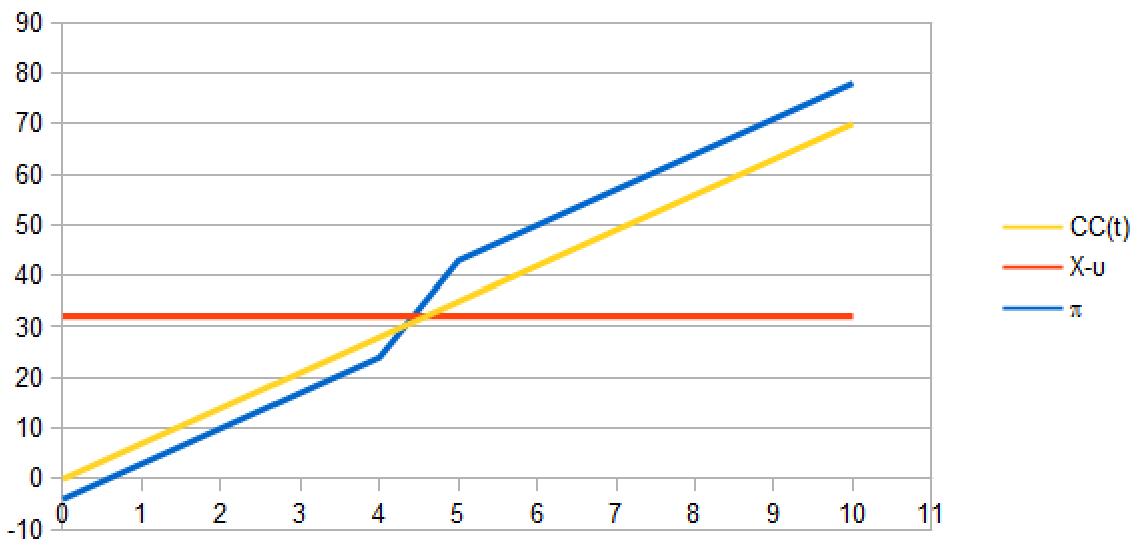


Figure 2: Pay-off dynamic within a repeated game

The following diagram shows the pay-off dynamic (y-axis) over each round t (x-axis). The pay-off is derived from a rational decision in each round as well as the assumed ability to match meaning in each round. The red line shows the material threshold $\varphi - \upsilon$ for cooperation derived from the pay-off vector of the PD-game. The yellow line shows the accumulation of communication capital CC(t) over time. The blue line shows the resulting total pay-off of the game of simultaneity. The leap in the blue line reflects the leap in the Nash–Equilibrium, provoked through the increase in CC. The leap takes place, when the CC crosses the cooperation threshold.

5. Application and Interpretation

According to Schumpeter (1950), political markets are markets in which politicians maximize their votes. What, however, is according to a pure teleological viewpoint the difference between a voter who decides to vote for the opposition and a member of government or a high ranked military officer who plans a coup against the head of his own government?

The difference between voters who choose between governments and military officers or government members who plan a coup exists mainly from a deontological viewpoint. The rebels break the rules of regime, while the voter acts in accordance to the law.

Clear defined rules on economic markets that are taken as given allow a pure teleological valuation. On political markets, however, rules cannot be seen as given. Hence, constraints for political markets are rather unwritten natural laws that require moral consideration from a deontological as well as teleological viewpoint. The deontological viewpoint brings the concept of plausible deniability to an important factor for strategic interaction within political markets. Hints and suggestions behind metaphorical expressions are therefore a widespread phenomenon in political interactions. While efficient economic markets are characterized by competition within rules, based on voluntary exchange between supply and demand side, the political markets are rather a bargaining situation and a process of continuous coalition formation. The currency of political markets, however, is credible commitments, reputation and potency as well as a common perception or understanding of social problems and their solutions.

As mentioned above describes a coup d' état either the replacement of a civil government by a military command or as Tullock pointed out a revolution from inside the government.

As we know from empirical literature, the probability of a coup depends significantly on the regime type. The probability for a coup is much lower in democracies compared to authoritarian regimes. Nevertheless, authoritarian leaders invest a lot more in coup-proofing. (De Mesquita et. al 2005, Powell 2011, Pilster et. al 2011). The most applied coup-proofing strategies are:

1. Filling military key positions with loyal religious, familial or ethnic adherents (Quinlivan 1999).
2. Limiting discrete communication within the military by the means of infiltration commission members from their own party into all levels of command (Feaver 1999).
3. Splitting military units into rival groups and counter balancing their battle force in case of partial revolt (Quinlivan 1999, Belkin 2005).
4. Giving private monetary incentives for long term relations.

The measures taken from autocratic leaders to prevent discrete communication between military officers or other government members also suggest that communication has a political meaning and therefore justifies a communication utility from a deontological viewpoint besides pure monetary incentives. Communication capital CC or a common specific background corresponds by this token to the abstract idea of a both sided specific investment (Williamson 1989). Williamson pointed out that specific investment from one side only leads to the fundamental transformation and the corresponding hold up problem ex post. Both sided investment in specific Communication Capital however, enables the players to establish a communication systems that withstands forces within political markets. The problem of metaphorical communication or exchange of symbols rather than clear defined words is that the meaning of symbols is closely linked to actions that are accompanying the speech act. In other words it is rather impossible to talk metaphorically about the coup without doing it.

6. Conclusion and Outlook

Based on the challenge to establish an specific communication system that rebels face before a coup takes place, the current article developed a strategic analyses of metaphorical speech acts. It was shown that metaphorical speech acts might leads to an optimal solution in the presence of a cooperative and non-cooperative listener. The conditions that need to be fulfilled are the existence a common background story or Communication Capital (CC) that enables the player to find specific focal points on the semantic map. Therefore, actions are seen as a partition structure over its semantic. The two-level game structure provides a more realistic representation of everyday interaction. Further, it solves the theoretical puzzle of innuendo and metaphorical speech by the means of the Speech Act Prisoner Dilemma (SAPD) and a simultaneous language game.

Further, it was shown why ambivalent goals, represented through to independent utility vectors, reflect the incentives on political markets. The reason lies in the coexistence of a deontological and teleological viewpoint within the political kind of discourse. In contrast, the economic kind of discourse takes rules as given and justifies therewith a pure teleological valuation with unambiguous goals. The concept of plausible deniability associated with deontological claims is therefore mainly neglect within the economic thinking. The concept of a communication utility when communication is limited provides a possibility to merge the deontological and teleological viewpoint, and provides a behavioral explanation for empirically proven irrationality based on rational decision theory. Therefore, the approach provides nomological theory that explains deviations from pure monetary maximization within political markets. The forces of political competition in authoritarian regimes, in regard to limitation of discrete communication or free speech can therefore be countervailed by specific communication systems rationalized through the concept of an communication utility. For reason of illustration, there were coup proofing strategies presented that are discussed in literature.

Lastly, the structure of Games of Simultaneity are derived from the potential permutation of a mean-goal relation. A Language Game is therefore the mean to achieve efficient outcomes in the PD-Frame-Game, on the other hand is the PD-Frame-Game a mean to generate a simultaneous Language Game. The logic of indirect speech requires a differentiation between a plausible meaning that a metaphorical expression has and a specific meaning that it might has. Formally, the concept of perspective rationality assures the formal requirements of a game and the choice between different semantics. The indirect actor serves a tool to choose the plausible meaning for the frame game, while the specific meaning provides the action set for the veiled language game. A crucial assumption therefore is that plausibility is common knowledge. The concept of perspective rationality ensures to formal requirements of the language game. Further research on the field of communication strategies and plausible deniability within political markets may also lead to interesting insights for agency problems or contract theory as well as for constitutional economics.

References

Bade, p. (2013):"Ambiguous act equilibria". In:Games and Economic Behavior, Volume 71, Issue 2, March 2011, Pages 246–260

Baron, D., P. (2003): "Private Policy". In: Journal of Economics & Management Strategy Volume 12Issue 1, pages 31–66, Spring 2003

Belkin, A., Schofer, E. (2003): „Toward a Structural Understanding of Coup Risk“ In: Journal of Conflict Resolution 2003 47: 594

De Mesquita, B.B. Smith, A., Siverson R.,M., Morrow J.D. (2003): “The Logic of Political Survival” In: Cambridge, Mass.: MIT Press, 2003

Bernheim, B.D., Whinston, M., D. (1998):"Incomplete Contracts and Strategic Ambiguity". In: The American Economic Review, Vol. 88, No. 4 (Sep., 1998), pp. 902-932

Brennan, G./Buchanan, J., (1985) "The Reason of Rules" In: Cambridge 1985;

Buchanan, J.(1977): " Freedom in Constitutional Contract" In: College Station 1977

Buchanan, J. (1987): "Constitutional Economics" In: New Palgrave, London/Basingstoke: Macmillan, Bd. 1, 1987, p. 588-595;

Gaier, Ulrich (1967):" Satire" In: Studien zu Neidhart, Wittenwiller, Brant und zur statirischen Schreibart. Tübingen

Goffman, E. (1959): “The Presentation of Self in Everyday Life”. In: Doubleday, New York

Goffman, E. (1969): “Strategic Interaction”. In: The Trustees of the University of Pennsylvania

Edgar, D. (2002):”The Prisoner´s Dilemma”. In: Nick Hern Books.

Eichberger, J., D. Kelsey, and B. Schipper (2009): “Ambiguity and social interaction,” Oxford Economic Papers, 61, 355–379.

Eisenberg, E. (1984): “Ambiguity as strategy in organizational communication,” Communication monographs, 51(3), 227–242.

Ellsberg, D. (1961): “Risk, ambiguity, and the Savage axioms,” The Quarterly Journal of Economics, pp. 643–669.

Etner, J., M. Jeleva, and J. Tallon (2012): “Decision theory under ambiguity,” Journal of Economic Surveys, 26(2), 234–270.

Feaver, D. P. (1999): “Civil-Military Relations”. In: Annual Review of Political Science 2: 211-241.

Harsanyi, J.C. (1955) “:Cardinal welfare, Interpersonal Comparison of Utility”. In: Journal of Politcal Economy 62. pp. 309-321

Harsanyi, J.C. (1968a). “Games with Incomplete Information Played by Bayesian Players, Part III”.In: Management Science 14, 320-332.

Harsanyi, J.C. (1968b). “Games with Incomplete Information Played by Bayesian Players, Part II”. In: Management Science 14, 468-502-182.

Harsanyi, J.C. (1967). “Games with Incomplete Information Played by Bayesian Players, Part I”. In: Management Science 14, 159-182.

Hayek, F.A. (1963): “ Arten der Ordnung”. In: *ORDO: Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* Vol. 14 (1963), pp. 3-20

Hayek, F.A. (1975): “Die Anmaßung von Wissen”. In:*ORDO: Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft* Vol. 26 (1975), pp. 12-21

Hirshleifer, Jack (2001):"The dark side of the force. Economic foundations of conflict theory" In: 1 Auflage Cambridge: Cambridge Univ. Press.

Kontodaimon, M., Neumärker, B., (2016):"Two Level Reform Game Problems of Greece (forthcoming in: Krieger, T., Neumärker, B., Panke, D. (Eds.): Europe’s Crisis: The Conflict-Theoretical Perspective.)

Lakoff, G., Johnson M. (1980)."Conceptual Metaphor in Everyday Language" In: The journal of Philosophy,Vol. 77, No. 8 (Aug., 1980), pp. 453-486

Lee, J., Pinker, p. (2010) "Rationales for indirect speech: The theory of the strategic speaker" In: Psychological Review, Vol 117(3), Jul 2010, 785-807.http://dx.doi.org/10.1037/a0019688

Powell, J., M. (2012): „Determinants of the Attempting and Outcome of

Coups d’état“. In: Journal of Conflict Resolution Nov 5, 2012

Quinlivan, J., T. (1999): "Coup-Proofing: Its Practice and Consequences in the Middle East".In: International Security 24 (2): 131-165

Schelling, T., C., (1960): “The strategy of conflict”. 1960. Aufl. Cambridge, Mass: Harvard Univ. Bearbeitete Ausgabe: “The strategy of conflict”. 1970. Oxford University Press

Schumpeter, J. A.(1950): Kapitalismus, Sozialismus und Demokratie, 2. erw. Aufl., Bern 1950

Selten, R. (1978): "The chain store paradox" In:Theory and Decision Volume 9, Issue 2 pp 127-159

Shepley, K.,A. (1972):"The Strategy of Ambiguity: Uncertainty and Electoral" In:American Political Science Review. Volume 66 / Issue 02 / June 1972, pp 555-568

Shubik, M. (1970): "Game Theory, Behavior, and the Paradox of the Prisoner's Dilemma: Three Solutions" In: The Journal of Conflict Resolution Vol. 14, No. 2 (Jun., 1970), pp. 181-193

Riedel, F, Sass, L. (2011) The strategic use of ambiguity, In: Working Papers, Institute of Mathematical Economics, No. 452

Terkourafi, M (2011): “The puzzle of indirect speech” In: Journal of Pragmatics, Volume 43, Issue 11, September 2011, pp. 2861-2865

Terkourafi, M (2014): The importance of being indirect: A new nomenclature for indirect speech".In: Belgian Journal of Linguistics, Volume 28, Number 1, 2014, pp. 45-70(26)

Tullock, G. Rowley, C., K. (2005) “The Social Dilemma: Of Autocracy, Revolution, Coup D'etat, and War“ In: Liberty Fund, 2005

Walter C. Soderlund, C.W. (1970): "An Analysis of the Guerrilla Insurgency and Coup D'Etat as Techniques of Indirect Aggression” In: International Studies Quarterly Vol. 14, No. 4 (Dec., 1970), pp. 335-360

Perterson, M (2015):” The Prisoner Dilemma” In: Cambridge University Press.

Pilster, U., Böhmelt, T. (2011): „Coup-Proofing and Military Effectivenessin Interstate Wars, 1967-99“. In: Conflict Management and Peace Science2011 28: 331

Pinker, S., Nowak, M.A., Lee, J., J.(2007a): “The Logic of indirect Speech”. This article is a PNAS Direkt submission. Online verfügbar: www.pnas.org/cgi/doi/10.1073/pnas.0707192105

Pinker, p. (2007b): “The ecolutionary social psychology of off-record indirect speech acts”. In: Intercultural Pragmatics 4-4, 437-461 DOI 10.1515/IP.2007.023

Rawls, J.(1971): “ A Theory of Justice”. In: Cambridge, Mass: Beiknap Press.

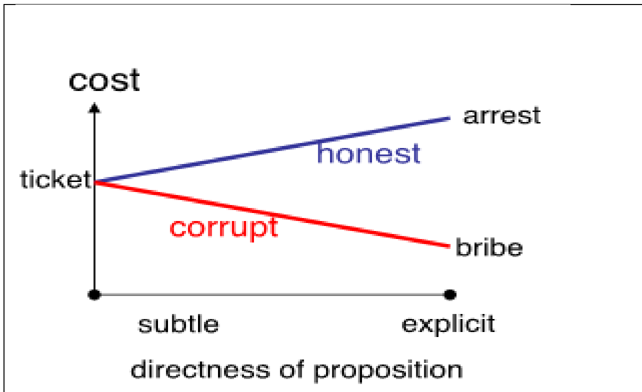
Voigt, p. (1999):”Implicit Constitutional Change-Changing the Meaning of the Constitution Without Changing the Text of the Document” In:European Journal of Law and Economics May 1999, Volume 7, Issue 3, S 197-224

Willamson, O.E. (1989): “Transactions Cost Economics”. In: Handbook of Industrial Organization, Volume I, Edited by R. Schmalensee and R.D. Willig © Elsevier Science Publishers B.V.

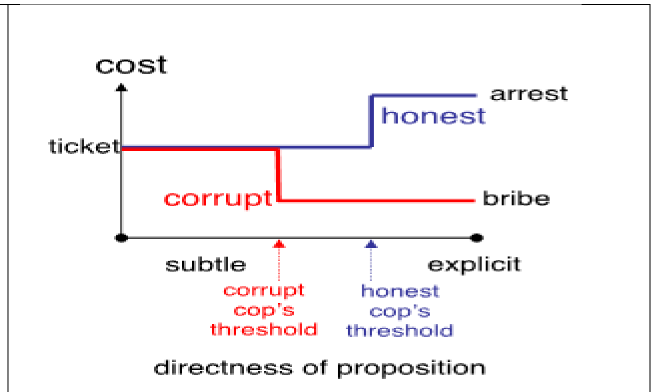
Wittgenstein, L. (1953) "Philosophical investigations" In. Macmillan, New York

Appendix

The non-linearity must lead to a gap between the state, where the bribe is understand from a cooperative listener and the state where a non-cooperative listener can oppose against it.



Linear decision rule



Non-linear decision rule (from Pinker et al. 2007)

The expected costs of bribery are calculated from:q: the proportion of hones officer;c_0:cost for bribery; c_1 cost for a ticket with $c_1 > c_0$; c_2 cost for a ticket with $c_2 > c_1$; and the psychological variable p: the probability that an officer will treat a statement with a given degree of directness d as a bribe. Further, given the linear reaction function of the officer L, which monotonically relates to the directness of the proposition to p, the probability that the officer will treat it as an attempt for bribe. Facing a corrupt cop leads to the expected cost: $y_c = c_0 p_c + c_1(1-p_c)$, respectively the cost, when facing an honest cop . $y_h = c_2 p_h + c_1(1-p_h)$. Hence, the total expected cost is given by: $y = qy_h + (1-q)y_c$. If now L is linear in d for both officers and, hence, the slope p is constant over all d, then the threshold for bribe is simply given by the fraction of honest officers. If: $q > (c_1 - c_0)/(c_2 - c_0)$, then the expected utility for bribing is less than paying a ticket. In other words, linearity on L corresponds to the independence between the decision rule of the officer and and the directness of proposition d. Only the fraction of honest or corrupt cops, respectively, determines whether the driver should say “something” with either $d = 0$ or $d = 1$, respectively. Indirect speech has no impact, hence, does not lead to any advantage.

However, the situation changes, when non-linear decision functions $L_h$and L_c are assumed, which relate to the probability p for taking the proposition as a bribe to the directness d of the proposition. Hence, the expected utility is represented by$y(L(d))$instead of $y(p)$. The total expected utility then turns out to be: Given the most simple function, which can represent the idea $y = q[c_2 L_h(d) + c_1(1 - L_h(d)] + (1-q)[c_0 L_c(d) + c_1(1 - L_c(d))]$. The step function illustrated in the left figure leads the following expected cost.

$y = c_1$ if $d < d_c$
$y = qc_1 + (1-q)c_0$ if $d_c < d < d_h$
$y = qc_2 + (1-q)c_0$ if $d_h < d$

Hence, the intermediate region $d_c < d < d_h$ leads to the lowest expected cost and, hence, to the optimal strategy for each rational actor. The required condition is $L_h(d) > L_c(d)$ over some interval.

To justify their idea, the authors describe the factors that could influence the decision rule of the officer. To sum it up, the consequences for the officer provoked by court determine mainly the strategic calculation of the cop, either for arresting an innocent driver or for being arrested for accepting a bribe. Hence, to describe formally the decision rule of the officer a reaction function of the court would be required.