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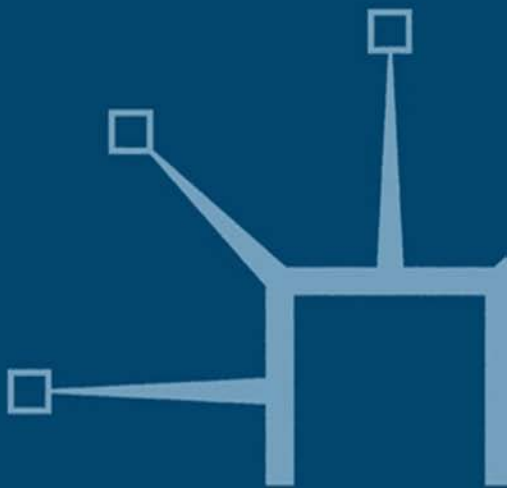
Risks and Benefits

Elke Muchlinski



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Elke Muchlinski
Economist (& Lecturer, Visiting Professor), and Philosopher, Free University, Berlin

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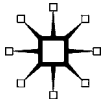

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Introduction

> The central bank owes the public transparency and accountability. Communication is at the heart of both.
>
> Blinder and Goodhart et al. 2001, 2

This book is concerned with the new paradigm of central banking. In a democratic society, transparency and accountability are not optional, but are required of independent central banks. The independence of modern central banks does not infer that central banks exist independently of structures in society or of the interactions between various agents in the financial markets (Cukierman 2008; de Haan, Masciandaro, and Quintyn 2008). A feature of the new paradigm is the interactive dimension of central banking and the financial markets. 'Monetary policy works *through* the market, so perceptions of likely market reactions must be relevant to policy formation and *actual* market reactions must be relevant to the time and magnitude of monetary policy effects. There is no escaping this' (Blinder 1998, 60).

The current consensus relates central banking practice to communication. The reason regularly given for why a central bank should speak publicly, or for why communication matters, includes the description of important aspects of the transmission process, the improved predictability of interest rate projections, and the shaping of market expectations (Bernanke 2004a; Chirinko and Christopher 2006, among others). A central bank's actions need also to be understood by market participants. Empirical findings underline the importance of the point of reference: the communication of a central bank with financial markets has crucial influences on interest rate projections made by market participants, and generates an anchor for the expectation-building process (Ehrmann and Fratzscher 2008; Issing 2005a; Kohn

and Sack 2003; Rudebusch and Williams 2006). This implies that the effectiveness of a central bank cannot be separated from language interactions and, hence, from 'language games'. Moreover, communication cannot be reduced to the disclosure of information by a central bank.[1] To put it more precisely, monetary policy and a central bank's communications cannot be described by linear input-output transmission, nor by purely deductive arguments resulting from a model view. The reason is – as explained by Alan Greenspan (2004, 36), among others – because 'uncertainty is not an important feature of the monetary policy landscape; it is the defining characteristic of that landscape'. There is no option as to whether or not to acknowledge this uncertainty. With uncertainty in the landscape, central banking needed anchoring.

I should immediately add that through communicative interactions and the use of language, monetary policy must be seen as a distinguishing feature of the decision-making process, since the decisions and actions of a central bank indicate its goals. Consequently, the attempt at achieving its goal also depends on the public's understanding. The functions of language in daily communicative interactions cannot be explained by the analogy of a mechanical impulse-resonance, as assumed in the traditional model of central banking. Meaning and understanding are generated through a process of communicative interaction. Furthermore, meaning and understanding arise out of a person's perception, recognition, and interactive procedures. Any reflection on information, interaction, and situation necessarily refer to language activity, or ways of acting. I would like to propose that modern central banking, too, should link its consideration of communicative interactions with cognitive science and language sciences.

According to the modern view of central banking – see, for instance, Blinder and Goodhart et al. (2001, 1) – 'attitudes and policies toward central bank communications have undergone a radical transformation in recent years. Not long ago, secrecy was the byword in central banking circles. Now the unmistakable trend is toward greater openness and transparency. Increasingly, central banks of the world are trying to make themselves understood, rather than leaving their thinking shrouded in mystery'. The view that 'the times, they are a-changin' has significant implications and consequences for economics and, hence, for central banking. Changing times inevitably include changing questions, taking the initiative of rethinking the primary methods and instruments in economic science, and the acceptance of an interdisciplinary approach to macroeconomic theory. Alan Blinder (2004) characterized the changes in modern central banking as a 'quiet revolution'.

In his presidential address, 'the missing motivation in macroeconomics' at the American Economic Association meeting in 2007, George Akerlof argued for an interdisciplinary approach in the field of macroeconomic theory, one of preferences with a concept modified and supported by research in sociology and psychology, to replace the prevailing abstract and deductive approach to economic problems. He refers to the dominating 'five neutralities' in macroeconomics. Preferences in macroeconomics are, respectively, devoted to abstraction or to model abstractions. These neutralities are linked to premises of the model and predefined preferences and, hence, to the avoidance of linking them to actions, observations, and behaviour. Norms, the interactions in changing contexts and circumstances which socially determine values and preferences, are the missing factors.

I set out in this book to assess certain implications and consequences of this new paradigm which until now have barely been discussed in the literature: the predominant formal language approach in central banking literature has to be supplemented by an everyday language approach. In doing so, I propose to focus on expectations and economic interactions as communicative actions, hence as articulations or 'language games'. The constitutive role of the use of everyday language should be integrated as an important component in the modern view of central banking and not be neglected in the academic debates. Language is not a label (Issing 2008).

Even the attempt to communicate through a coded language or a special, formally designed language has to be retranslated into everyday language in order to be an appropriate form of central bank communication. A coded language or formally designed language approach to economics and central banking is free of ambiguity and vagueness, which seems to be beneficial because of their particular methods, which focus on quantifying, measuring, and forecasting. The risk of a coded language, or even a formally designed language, is that necessary changes in monetary policy action will not be part of the communication because the coded language is defined as being independent of changing environments and contexts. A coded language approach to central banking, regardless of its context, culture, and constitution, lacks credibility and reputation. A coded language *cannot* fulfil the central banks' genuine task of guiding market expectations. My point is this: the uncertainty would be elevated by the use of a coded language or a purely formally designed language.

In contrast to a coded language, the use of everyday language – the language in practice – configures a certain context which is understood by

the participants of the financial markets and the central bank. Therefore the language in use functions as an anchor for the expectation-building process and decision making in an uncertain environment. Certainty does not arise out of formal symbolic or deductive reasoning because it is encapsulated in a predefined world or system. It therefore provides certainty within a well-defined logical system. According to acting in markets, certainty has to be grounded in language interactions. There is no certainty to be found in reliance on numbers or codes. Certainty is not an option or possibility. According to the uncertain landscape of central banking, *any kind of a vision of certainty* can only be perceived as the result of a common understanding among heterogeneous agents in the markets (Simmons 2006).

Regarding the landscape of uncertainty, individuals are creating a realm of certainty by linking through action and articulation their perceptions of the situation (in which they are acting) to the perceived actions of other agents (Gerd Gigerenzer and Richard Selten 2001a, 2001b). John Maynard Keynes (1936, 161) described this interaction and reliance on one's own view in relation to the perceived views of other agents as follows: 'Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as a result of animal spirits – of a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities.' The metaphor 'animal spirits' implies a particular state of confidence and trust in a particular situation (Boyd 1979; Muchlinski 1996a; Akerlof and Shiller 2009). A necessary condition in creating a state of confidence is that this confidence is perceived and shared by other agents in the market. To argue that an agent creates his or her private state of confidence makes no sense. A state of confidence cannot be private. Also, an agent in the financial markets cannot create a private meaning of the situation, although she or he is able to perceive the situation differently. This is also true for the use of language, as Bertrand Russell and Ludwig Wittgenstein emphasized. Wittgenstein (1959, § 241) pointed to agreement in uncertain situational contexts: 'That is not agreement in opinion but in form of life.' Agents in the markets take direct possession of the commodity or product, or the option to buy or to sell, without having doubts. They use everyday language. In acting without doubts, heterogeneous agents create a kind of certainty or state of confidence homogenously. This is comparable to a building having supporting foundations. The 'logic' of everyday language is rooted in language interacting in practice. Everyday language does not refer to a system of abstract logic.

I wish to introduce four main considerations: first, according to the success of the scientific process in the sciences, it should be noted that the scientific process is not – at least ideally – based on the avoidance of alternative questions and methods of exposition. This is also true for central banking and macroeconomics. The crucial objective for a central bank is to guide market expectations. A central bank's way of acting creates the normative meaning of sentences. Concepts are embedded in economic interactions. The meaning does not arise out of a prefixed or predetermined world.

A second consideration concerns the central premise throughout this book: anchoring is only possible by acknowledging that language interactions and different modes of communication are essential to economics. Economics is not driven by universal laws or natural laws (Issing 2010a, 2010b; Muchlinski 2011). This is of crucial importance to a central bank's task of guiding market expectations. A central bank's way of acting creates the normative meaning of sentences. Concepts are embedded in the language-game. Not only are times changing, but language-games also are changing and bringing, therefore, a change in concepts and the meaning of words. It is not possible to anchor central banking in a system of formal symbolic or coded language successfully. To explain a word requires going back to the language-game itself, which is also mutable, as the current financial crisis has underlined. The current crisis has also been driven by new financial methods of reallocation and by financial products labelled by codes: AAA, AA, A, BBB, BB, B, and so forth. This 'Esperanto of the capital markets' (Franke and Krahnen 2009) has been substituting for everyday language since the late 1990s. These codes have been created by rating agencies and accepted throughout the economic business as a guarantee of quality and as a promise of gains and wealth. As a code system, this method has contributed to keeping up an appearance of certainty in order to reallocate risks internationally.

My third consideration deals with the implications and consequences of the new paradigm of central banking. The implications arise from the proposition that the meaning of a sentence is embedded in the use of its context. For this reason, I provide a reinterpretation of 'monetary mystique', linking this term both to its historical context and to current debates in central banking literature.

A fourth consideration examines the risks and benefits of coded language by emphasizing communicative interaction as language-based interaction – that is, interaction based on everyday language. However, this text subscribes to communicative interaction as being aimed at a

common understanding and, therefore, as being opposed to mechanical analogies. A central bank's decisions and communicative interactions can be devoted neither to abstract premises nor to a coded language.

The innovation which emerges from this book is the supplementing of standard economic methods, known as deductive and formal reasoning, with an interdisciplinary approach linked to inductive and hermeneutic principles. The argumentative strategy favoured by deductive reasoning emphasizes truth and certainty according to predefined premises, axioms, and variables. Embedded in a logical system of argument, deductive reasoning leads to exactness, non-ambiguity, and the measurability of economic factors, which themselves have been prepared in order to be quantified and measured. Here we can understand why deductive reasoning in economics is indisputably acknowledged. Deductive reasoning presumes certainty of knowledge in the present and future, since the context is presumed to be stable or invariant. However, this certainty arising out of deductive reasoning is a result of the prearranged, systematic application of predetermined, fixed rules to a subject.

Turning to inductive reasoning we find an array which seems to frighten scientists because it moves from the sphere of influence. Inductive reasoning implies vagueness, ambiguity, uncertainty and is mainly based on probabilistic argument. However, neither inductive reasoning nor the hermeneutic and the heuristic approach to social phenomena presume truth or scientific objectivity. As outlined in the previous paragraph, the presumption of truth and objectivity is regularly attributed to deductive reasoning with regard to the scientific design of the deductive argument as logical consistency, coherence, exactness, and precision.

As is appropriate for all sciences, economics uses particular concepts, categories, symbols, and codes in describing and explaining its scientific results. Scientific terms are used in order to be as precise as possible and to avoid disputes about their meaning. Similar to different branches in macroeconomics, central bank literature uses systems of codes. Their meaning is easily understood by deductive reasoning. They are understandable by tautologies. For instance, the decision to raise the Federal Reserve Funds rate leads to a particular perception that the Federal Reserve Bank (Fed) now has a different assessment of the business cycle and movement of prices than before, regarding, for example, that expectations of inflation are in the air. The Federal Reserve Funds rate is embedded in a logically defined system regarding the macroeconomic effects of its movement. Every decision to change the Federal

Reserve Funds rate will therefore unavoidably move other variables of this predefined system. Moreover, this predefined system contains a huge variety of different specified variables, such as expectation, risk, uncertainty, and communication, among others. At this point the crucial question reaches the agenda of how the public perceives and understands the decision of the central bank regarding the public's own methods and instruments for assessing the economic context and creating economic forecasts regarding inflation expectations, short-term and long-term interest rate projections in various money markets, and the expected yields.

Communication in science is often based on axiomatic and deductive reasoning. However, to focus on language in different contexts and communication interaction of central banks requires stepping beyond the axiomatic logical system in order to acknowledge the role of language as an instrument of cognition and acquisition of knowledge. Language is not neutral towards thoughts and cognition. In order to be successful 'through' market interaction, a central bank needs to acknowledge the constitutive role of language for creating economic contexts.

We need to perceive that neither central banking *nor* the communication of central banks will lead to truth or objectivity. The success of communication is based on language interactions among heterogeneous participants in distinct markets surrounded by variable contexts. Therefore, truth and objectivity are embedded in the language interaction. Moreover, communication also implies miscommunication which will initiate further dispute. We have to recognize that communication is not a linear transformation of information and an already given meaning. Understanding is not the exchange of an already given meaning of a sentence or of words. Understanding is not based on a measurement of wording, because the meanings of sentences do not come from the measurement.

This book also endeavours to add consideration of communicative interaction and the creation of meaning and understanding from modern cognitive and language sciences. I propose a *conceptual framework based on three dimensions* to expound upon why a coded language is not capable of contributing to the effectiveness of monetary policy. I want to bring central bank literature into dialogue with important research in the language sciences as well as with heuristic and communications approaches in the social sciences. I investigate why economic interactions and procedures can be treated neither as 'universal laws' or 'invisible hand mechanisms', nor be discussed in terms of 'universal concepts'. Economics as a social science must also focus on

particular cases of the discontinuity of events, and on the sensitivity of contexts. Economics and economic activities are without question not self-regulating or self-ordering mechanisms or functions. The most recent financial crisis has, almost as a cliché, shown how relevant are changes in macroeconomic concepts, methods, and instruments. One has to acknowledge that a barter economy differs fundamentally from a monetary economy. A monetary economy is based on a multiplicity of relationships between creditors and debtors as types of contracts, and on heterogeneous agents in the domestic economy as well as in different countries, regions, and currency areas. Macroeconomic policy can only be treated in light of coordinative interactions between these different agents. In this light the importance of institutions becomes a significant consideration, because they are 'repositories of knowledge and experience' (King 2004). It should also be stated here that this book does not deal with the role of language as modelled in game theory, nor with institutional economics and evolutionary economics. A great deal of work has already been done in this field of research. Although investigation of central banks as learning organizations with particular interorganizational relations and networks still remains to be done, it is not the subject of the present book. This book explicates the interdependence of structures and actions, customs, norms and their social impregnation, and how understanding by disagreement, agreement, and interpretation shape contexts because meaning and understanding are not predefined, already given qualities which can be exchanged in market transactions.

This book is structured as follows: In Chapter 1, certain aspects regarding the Federal Reserve Bank's road from 'monetary mystique' towards 'matching deeds to words' are expounded with reference to lines of argument in the Federal Open Market Committee (FOMC) transcripts of the Paul Volcker era. The Volcker era could be reread as an example of an inadequate formal approach, because the 'k-percent rule' or 'money growth-targeting' ignored the circumstances of institutional interactions between the central bank and commercial banks regarding the concepts of money, and of money demand and supply in the economy.

Chapter 2 introduces a conceptual framework for communicative interaction, which combines the three dimensions of information, interaction, and context. To understand how monetary policy works *through* the market, one needs to acknowledge the processes of perception and the understanding of the central bank's talk and communication within markets involving many different market agents.

Chapter 3 turns to consider the argument that because central banks are part of society central banking needs to refer to circumstances. Central banks shape circumstances by their communicative interactions. This chapter discusses the *forecast-based approach* to central banking as an example that links a central bank's judgment to changing circumstances, because it gravitated towards new concepts and different methods of communication in order to configure the debate on the methods of decision making and monetary policy. The chapter introduces the 'risk-management-approach' as a superior approach to central banking, emphasizing that a central bank should avoid being trapped into selective perception and a cognitive straitjacket, thereby being imprisoned by cognitive dissonance and captured by false precisions, exactness, and a supposed linearity of information through following inadequate, rigidly fixed rules and optimization instead of problem solving.

Chapter 4 examines the further aspects of the interdisciplinary approach to central bank communication. If we remember that a central bank can control only the Federal funds rate, which should influence long-term real interest rates (and, hence, the inflation expectations of different interactions in various financial markets), a central bank needs to reflect on its own contributions to the creation of the context which surrounds the decision-making process of both financial markets and the central bank.

Chapter 5 moves on to address the question which runs as a thread through the book, considering a variety of aspects that can be grouped under the heading 'risks and benefits of a coded language or purely formal language approach to central banking' with reference to some debates on the formal language approach to sciences from the 1920s, which are of great relevance to current debates.

The conclusions of the research are presented in Chapter 6.

1
The Way Out of 'Monetary Mystique'

> The mystique thrives on a pervasive impression that central banking is an esoteric art. ... The esoteric nature of the art is moreover revealed by an inherent impossibility to articulate its insights in explicit and intelligible words and sentences. Communication with the uninitiated breaks down.
>
> Karl Brunner 1981

Discourse on central bank transparency and communication has been moving beyond the silence of a black-box mechanism. It has initiated a theoretical upheaval on modern central bank theory. This is also true for the areas of research related to a central bank's interactive procedures touching its market interdependencies and relations. The focus on the central bank's way of acting, on the use of language and modes of communicative interactions, has also been drawing much attention.

Two decades ago, central banks were envisioned as being 'temples of secrets' (Greider 1989) surrounded by so-called mysterious silence and opacity. Today, modern central banks no longer perceive themselves as temples of secrecy rooted in the realm of metaphysics and unable to communicate and explain their procedures. This is true for a central bank as an institution interacting with the financial market which, itself, is not invariant. As an institution, a central bank acts within historical and contextual forms of life and norms. The success of a central bank's communicative interactions with the agents of financial markets is not rooted in presumed invariant structures of the markets itself. Any communicative interaction involving the central bank affects and shapes its circumstances and, therefore, the context of its action. The goal of a central bank, its mandate of price stability, its policy and instruments, are not phenomena of nature and, hence, not an issue for

natural science. The concepts of economics as social science are not embedded in natural science or natural laws.

Paper money is created by the central bank based on certain principles and, foremost, on the acceptability of its role in society. A central bank's macroeconomic responsibility is to provide price stability and, hence, stable money throughout the whole of the economy. Credit is created by teamwork or interaction between central banks and commercial banks. Commercial banks borrow money from central banks in order to lend it to the public; they also use the deposits or savings held by the public. Commercial banks have to pay back the borrowed money to the central banks. Under normal circumstances, the process works because commercial banks function as intermediaries. They borrow money from central banks and lend money to the public at a higher interest rate than they have to pay to for borrowing or for the deposits.

The acceptance of a central bank's money depends on how money possesses credibility as a store of value, a standard of deferred payment, and medium of account (Tobin 1983). Money is not a veil for a barter economy. Money is not neutral regarding its function in a monetary economy. Taking this into account, any action of a central bank is, itself, a part of conceptual actions within a complex situation. It is for this reason that central bank talk (see Blinder et al. 2001, How do central banks talk?) matters and why it gives the use of language an important role in shaping the position of central banks. As was said in the introduction, words or sentences have no meaning beyond their use in a context. 'Every sign *by itself* seems dead. What gives it life? – In use it is *alive*' (Wittgenstein 1978, § 432). The history of central banks provides many examples of how the meaning of words has changed according to the changing environment. As treasuries of knowledge and experience, central banks have to recognize the epistemic preconditions of a successful communicative interaction with the market. Otherwise it will treat economic agents as machines.

Knowledge of context and environment is also created. This embodies a central bank's history, which can be described by using concepts expressed in language. These concepts are impregnated by their usage in historical context and have to be reread in the light of current debates. The literature on central banks and their decision-making procedures under conditions of uncertainty has begun to reconsider and revise important concepts (Blinder et al. 2008, 2001; Issing 1999). Also, economics, like science, changes all the time and, hence, the economic background also shifts constantly. We base all the judgments with which we formulate decisions and actions – and regard

concepts, meanings, and methods –upon variable social contexts. Therefore concepts, conceptual investigations, and methods must be flexible.

It is a crucial characteristic of scientific procedure to change, rebuild, and reassess concepts, methods, and models when they do not fit the contemporary world. Judgments about the market have constantly been rethought and scrutinized. Only through living in a 'panelled boardroom', or seeing oneself as a representative of the principles of the classical or neoclassical world, are we embedded in a certain world without any perceived need to change our views and considerations. In contrast to this artificiality of a constructed world, judgment made under uncertainty necessitates the orientation of a common background. Keynes criticized the artificial world in his article on the theory of interest rates:

> [A]ll these pretty, polite techniques, made for a well-panelled Board Room and a nicely regulated market, are liable to collapse. ... I accuse the classical economic theory of being itself one of these pretty, polite techniques which tries to deal with the present by abstracting from the fact that we know very little about the future'. (Keynes 1937, C.W., XIII, 215)

The contextually received history of central banks can be judged and described by their applied concepts and their implemented actions, both then and now. The new paradigm which can be pictured by two main concepts of 'matching deeds to words' (Blinder) and 'we do what we say and we say what we do' (Issing), implies the acknowledgement of language as a social fact. The consequence is that the predominant formal language approach in central banking literature has to be supplemented by an everyday language approach. Even the attempt to communicate through codes or a special 'central bank' language has to be rethought if this could be an appropriate means of central bank communication.

Language is not the gateway to transmitting an already given meaning, like throwing a billiard ball. The function of language activity in a dialogue – even the communicative interaction of the central bank with non-homogeneous agents of the financial market is a dialogue – derives from the wish to be understood. People communicate to reach a common goal or understanding. 'Nothing could be more obvious: we want to be understood, and others have an interest in understanding us; the case of communication is vastly promoted by such sharing' (Davidson 1994, 9). This

is also true for institutions which communicate through people, agents or, for instance, the chairman of a central bank.

As it is known from the history of science, any event is embedded in its historical context. It is not possible to separate the event from the context without, as a result, producing a meaningless object. Also, this meaning and its understanding are embedded in action. Emphasis upon coded words implies the danger of misunderstanding and of veiling the context in which a central bank acts. The attempt to rely upon a coded language neglects the conditions under which the central bank acts to carry out its mandate. In Chapter 5, I emphasize that a strategy of a coded language (or purely formal language) approach to communicative interaction is an impediment to the central bank's road to satisfying its mandate. The effect of a monetary institution like a central bank is a result of its capacity to act and of the acceptance of these actions by society.

The Federal Reserve's road to transparency, flexibility, and monetary policy is evident: since its turning point in the year 1994, the Federal Reserve has been redefining some of its concepts and monetary policy rules (see Kohn and Sack 2003). The Federal Reserve Bank (Fed) has attempted to move out of 'monetary mystique' towards a practice of 'matching deeds to words'. At this point, we need to ask what the terms 'monetary mystique' and 'mystique' mean as regards the history of the Fed, and in comparison to the modern view of the central bank following the maxims: 'matching deeds to words' and 'we do what we say and we say what we do'. I will try to provide an answer to this. Here, I want to outline the changing visions of a central bank's policy.

The term 'monetary mystique' was created to describe the monetarist experiment of the Federal Reserve Bank. I will go on to link the term 'mystique' to the current debate on central banking. The present state of academic discourse emphasizes transparency and communication of central banks as being desirable for both the enhancement of the effectiveness and accountability of central banking (Blinder et al. 2008). In current times there is no longer a possibility for a central bank to conceal itself behind a wall of so-called non-interactive behaviour, as was the case until the Federal Reserve began to change its communications strategy.

Historical trends in macroeconomics can be summed up by focusing on the consequences for both central banks and monetary policy between 1973 and 1998. The breakdown of the Bretton Woods agreements and the international exchange rate system in 1973 (which breakdown actually began in August 1971 with the Smithsonian Agreement),

provided a challenge for central banks in the industrialized countries. The spirit of the Bretton Woods agreement led to a fixed-rate dollar standard from 1950 to 1970, which also implemented the U.S. dollar as a *numéraire*. The Bretton Woods agreement kept exchange rates within 1 percent of this par value. The United States remained passive in the foreign exchange markets, while European countries fixed a foreign par value for domestic currency by using gold, or a currency tied to gold, as the *numéraire*. This asymmetric system of international monetary policy meant that countries other than the United States intervened in the foreign market to stabilize their domestic currencies by using the U.S. dollar as an intervention currency. The U.S. anchored the dollar price level for tradable goods by an independently chosen monetary policy in the United States, while industrial countries other than the United States subordinated the domestic money supply to the fixed exchange rate. The role of central banking in this system of exchange rate targets remained hidden.

After the late 1960s, the willingness of other countries to peg their currency values to the overvalued U.S. dollar evaporated. The U.S. dollar came under pressure to depreciate. A rearrangement to a new par-value system was made in December 1971, but lasted only until February 1973. Up to that point, the central banks of the Western world had conducted monetary policy under the exchange rate target anchored by the U.S. dollar.

How did economic theory respond to this changing economic environment? Both economic theory and empirical evidence noted these changes to central banking and monetary policy formulation. It has been observed that the policy changes after 1973 were not driven by a simple causal mechanism of empirical evidence or theoretical reasoning. 'Economic science evolves by way of a complicated back-and-forth interaction of theoretical and empirical considerations' (McCallum 1999, 172). After 1973, central banks developed new strategies to stabilize the paper money standard around different monetary regimes such as inflation targeting, monetary targeting, exchange rate targeting, and different strategies between rigidly fixed exchange rates and flexible exchange rates. The era of the floating rate, 1973–84, also implied that the United States remained passive in the foreign exchange markets and decided on monetary policy and central banking autonomously and independently with respect to the foreign exchange value of the U.S. dollar (Eichengreen 2007).

Since then, the Federal Reserve Bank has been acting in a significantly different role in the international monetary system compared to

other central banks. The U.S. dollar serves as the nominal anchor. The international floating rate system, combined with gradual elimination of capital controls (and, hence, free currency convertibility of the main currencies of this so-called non-system of the post-Bretton Woods era) did not imply that central banking in the industrialized countries could avoid stabilization policy, that is, aiming at a nominal anchor (Mundell 1995). An example is the regional monetary system implemented by the European Monetary System as a Deutsche Mark Era from 1979 to 1992 (McKinnon 1993).

Changes in both the macroeconomic and central banking theories of this epoch coincided with the rational expectations hypothesis as a fundamental new approach to economic theory. McCallum exposed several misconceptions about the meaning of the rational expectations hypothesis. The reason why the expectations of agents will agree with the analyst's model of the economy can be detected in the analyst's goal to depict the model *as if it* were true. The premise of rational expectations states: 'agents form expectations so as to avoid systematic expectations errors in actuality, which implies that they behave as if they knew the structure of the actual economy' (McCallum 1999, 172). The changes of trends in macroeconomics from 1973 to 1998 also initiated upheavals in the theory of monetary policy and central banking. Moreover, they set in motion a compelling shift for central banking and monetary policy towards paying attention to guiding expectations in order to stabilize a paper money standard.

Central banking and monetary policy rules have become a distinct consideration of economists and theorists (Goodfriend 2003). This has provoked new questions, distinct methods, differing viewpoints, and the opening up of further investigation within the scholarly community. The abandonment of the gold–dollar standard was also an abandonment of the theoretical illusion of stabilizing the functions of a currency by referring to constraints as given by a metallic standard. The radical changes for central banking and monetary policy have evolved out of new perceptions and responsibility for price stability.

As history reveals, central banking and monetary policy have had to pass through a long and painful process of learning and reorientation. The experience of high inflation and the responses of central banks in industrialized countries to tighten monetary policy also produced painful and restrictive effects on domestic economies as well as international economies, business cycles, and macroeconomic performance (Muchlinski 2001b). Nations were confronted with a painful mixture of tightened money policy, a high level of interest rates, and tightened

fiscal policy. A new phenomenon in macroeconomic theory and central banking came to the policy-making agenda, emerging in the literature of the 1970s and early 1980s, namely 'stagflation'. The term stagflation was supposed to encapsulate the new relationship of inflation, recession, and unemployment. It also opened up new and distinct directions in macroeconomic theory and in the fields of research on the role of central banking, its targets and instruments.

The evolution of different perspectives on the relation of short-term and long-term expectations was driven by a critique of the adaptive expectations hypothesis, itself identified with Keynesian macroeconomics (Leeson 1998). The radical shift towards a tight money policy in the middle of the 1970s by the Bundesbank of Germany and the Bank of Japan opened up the still-ongoing debate over the role and responsibility of central banks in democratic societies regarding inflation, employment, growth, stagflation, and exchange rate volatility (Muchlinski 1999b). The research into the effect of central banks and their monetary policies on international monetary relations has become more important and better acknowledged. The function of central banks in the economy and their monetary policy strategy, their instruments and methods, appeared to be something in the background, within the domain of a 'temple of secrets' (Friedman 1996). One striking feature of the late 1970s was that central banks had to learn to deal with different kinds of flexible exchange rate regimes and monetary policies. This observation and experience opened up fundamental debates about proper monetary policy strategy in open economies. The central bank's success was established through the interdependence of short-term and long-term interest rates, interest structure, and inflation expectations (Bernanke and Blinder 1992).

As I have outlined, the situation after 1973 was indeed an experimental epoch. It can be described as

> a situation in which the world's leading central banks were responsible for conducting monetary policy without an externally imposed monetary standard (often termed a nominal anchor). Previously, central banks had normally operated under the constraint of some metallic standard (e.g. a gold or silver standard), with wartime departures being understood to be temporary, i.e. of limited duration. (McCallum 1999, 175)

In the 1970s the Federal Reserve Bank pursued a strategy of circumventing demands by the U.S. Congress that were empowered by the Freedom

of Information Act of 1966 (FOIA). The Federal Reserve was accused of hiding behind a curtain of 'mystique' and 'secrecy' by using 'base-drifts'. In the following chapter I will explain how the 'base-drifts' of the Federal Reserve function as a particular strategy of communication.

1.1 'Monetarist experiment' or 'smoke screen'

In the literature we find at least three different approaches to this epoch. An initial interpretation portrays the years from 1979 to 1982 as a monetarist experiment by Paul Volcker, at that time the chairman of the Federal Reserve. Volcker was held responsible for a half-hearted approach to implementing the monetary policy and its subsequent lack of success (Friedman 1982). Moreover, there were negative consequences to this half-hearted monetarist experiment, namely that the Federal Reserve's tightened monetary policy constrained not only the domestic economy of the United States, but also caused a sharp rise in interest rates throughout the global financial market and economy. It led to a painful period of high interest rates, lasting until the early 1980s, and to the debt crises of developing countries.

A second interpretation of this period regards the change to monetary aggregates and money market as a success of the monetarist experiment because important macroeconomic indices, that is, the consumer price index (CPI), GDP deflator, and also the Core price index fell after 1980, while the Federal Reserve funds rate had also been increasing dramatically. However, the question arises as to whether inflation went down because of declared money growth-targeting or from setting of the nominal interest.

A third interpretation asserts that no monetarist experiment had actually been implemented. Because of the influence of inflation psychology, with expectations of high inflation in the air, the traditional strategy of setting nominal interest rates was becoming less acceptable to politicians and the public. Steering market expectations through setting the Federal Reserve funds rate was associated with a Keynesian strategy, whereas focusing on monetary supply or monetary growth rates, respectively, was seen as a monetarist strategy. However, the Federal Reserve had never intended to act upon, and never could have acted upon, the basis of a monetarist 'k-percent-rule'. Volcker viewed this period as 'monetarist experiment in practice'. David Lindsey stated that the Volcker regime change was not identical with a monetarist experiment (Lindsey et al. 2005, 224). Feldstein (1994) analyzed the demanded monetarist strategy in light of the weakened position of the

U.S. dollar since 1973. Volcker's policy intended to reinstall its function as a key currency and to stabilize the hegemony of the United States. The FOMC sought to avoid 'great trouble internationally'. Henry Wallich, for instance, stated, 'as the Chairman has pointed out – he gets this question again and again and we get the same thing in the press and in criticism at home and abroad'.[1]

I would like to add some further information regarding the third interpretation given above. Volcker took office as the chairman of the Federal Reserve on August 6, 1979, at a moment in the history of the Federal Reserve which is identified in the literature on central banking and monetary policy as a significant epoch (Volcker/Gyothen 1992).[2] The Federal Reserve's shift towards a targeting of the monetary growth rate by steering the non-borrowed reserves in accordance with desired three-month growth rates of M1 and, later, M2, required a quantifying of the total reserves in relation to the non-borrowed reserves. Open market operations, as carried out by the Trading Desk of the Federal Reserve Bank of New York under direction from the FOMC, imply that the Federal Reserve was also dealing with the level of the Federal Reserve funds rate. The crucial point is that the paradigm shift towards the non-borrowed reserve policy could not work without using the Federal Reserve funds rate. The assessment of the borrowing reserves and its prospective path was discussed regarding the implications for the Federal Reserve funds rate (see for instance FOMC transcript, conference call, June 23, 1983). 'The Federal Reserve funds rate was not ignored; it was used as an indicator of the accuracy of reserve estimates' (Meulendyke 1998, 50).

The Federal Reserve did not publicly outline the contingent nature of the new monetary strategy. It was publicly introduced as a targeting of the monetary growth rate by steering non-borrowed reserves. Volcker defended the new technique in press conferences, in the Congress, and in the FOMC meeting. He provided additional remarks in press releases on the conditions of targeting money growth ranges in response to ongoing inflationary development in order to win the battle against inflation. His announcement to the press in February 1980 emphasized the key role monetary growth rates played at the turning point in the FOMC's monetary policy. The message was clear: the Federal Reserve was prepared to fight inflation by controlling the money supply. It was obvious that the crucial element of this new structure for steering the quantity of money would be to quantify the money supply while the amount of money demand remained unknown.

In the FOMC meeting of August 1979, Volcker emphasized that the FOMC had no other choice while high inflation was expected:

> We do not have a lot of room for maneuver and I don't think we want to use up all our ammunition right now in a really dramatic action; I don't see that the exchange market or anything else really requires that at the moment. Certainly dramatic action would not be understood without more of a crisis atmosphere than there is at the moment. Ordinarily I tend to think we ought to keep our ammunition reserved as much as possible for more of a crisis situation where we have a rather clear public backing for whatever drastic action we take. (FOMC Transcript, 8/14/1979, 22–23)

Under Chairman Volcker, the Fed also sought to diminish congressional criticism through anti-inflationary strategy. By emphasizing a focus on the money supply based on money growth rates and aggregates, the 'monetarist experience' was in fact 'atmospheric' lip service (Lindsey et al. 2005, 229). The aim of the Federal Reserve was primarily to rebuild price stability. Volcker outlined it:

> We could well end up by exceeding the targets for the year, after making a hullabaloo about this change in technique. And we could run into a reaction that at that point would be adverse. So there are advantages, disadvantages, and risks on all sides of this equation. (FOMC Transcript 10/06/1979, 9)

The Federal Reserve press release of October 6, 1979, emphasized control over the money supply. With the declared strategy of retreating to monetarist principles aimed at targeting the monetary growth rate by steering the money supply, the Federal Reserve tried to regain its credibility. The FOMC's target path for the monetary aggregate was to be designed in terms of the quantity of money, or a monetarist approach to central banking. Volcker emphasized it further in his first Humphrey-Hawkins testimony on February 19, 1980. In 1978, the Full Employment and Balanced Growth Act, that is, the 'Humphrey-Hawkins Act', bound the Federal Reserve to monetary targets one year hence. This commitment has been criticized in the literature because of its rigidity:

> If anything, the policy mistake of the late 1960s and 1970s is that actual monetary policy followed the Taylor rule, too closely! Rather than follow the Taylor rule, policy should have been considerably

> tighter. Given the mistake of following the Taylor rule in the 1970s, the deviation from the Taylor rule in the early 1980s and the policy tightening associated with the Volcker disinflation was an appropriate response to the inflation problem created by following the rule. (Orphanides 1999, 19)

The transcripts of the meetings from 1979 to 1983 throw light on the debates in the FOMC regarding the new monetary procedure:

> Against this background, the staff had been directed to prepare memoranda on a package of possible actions designed to show convincingly the Federal Reserve's resolve to contain monetary and credit expansion in the U.S., to help curb emerging speculative excesses, and thereby to dampen inflationary forces and lend support to the dollar in foreign exchange markets. Such a package might include actions on reserve requirements and the discount rate; in addition, the staff had been asked to analyze the implications of a possible shift in Federal Reserve Open Market Committee procedures, whereby the Desk, in its day-to-day operations, would operate more directly on a bank reserves, rather than a Federal Reserve funds rate, target. (BOG Minutes, 10/4/1979, 1-2, in Lindsey et al. 2005, 201)[3]

The Federal Reserve's declared new monetary targeting was not only a quantum leap back to the past, it was a return to rethinking monetary policy in terms of the gold standard 'rules of the game' in order to solve the nominal anchor problem which confronted the U.S. dollar. The Federal Reserve had lost credibility with the public in the domestic economy amid higher prices and continued price acceleration, while at the same time confidence abroad was lost from perceived failure. This consideration was put forward by Emmett Rice:

> First of all, the psychological impact of a change in operating technique will be strong. I think it will be strong not only in domestic markets but also in foreign markets. In my view the foreign markets will read such an announcement as an expression of our determination to control the money supply, and that will have salutary effects. (FOMC Transcript, 10/06/1979, 22)

The Federal Reserve tried to present itself as a firm supporter of an anti-inflationary policy. It organized new political networks, such as the Shadow Open Market Committee, and made certain arrangements

with some of the supply-side thinkers in Congress to defend its own independence as a central bank. Amid controversy, the FOMC discussed the monetarist approach to the central bank's action and the consequences of setting the nominal interest rate in the short run. The FOMC considered specifying desired short-run growth rates for M1, M2, and other monetary aggregates, which were then to be structured for the associated non-borrowed reserves and monetary base.

Volcker portrayed the switch towards a monetary target as being a 'new technique' in order to let the public and the market know that the Federal Reserve Board stood ready to control inflation. This 'new technique' implied new wording, an 'alternative language is also provided for placing main emphasis either on monetary aggregates or on money market conditions' (Bluebook, March 1979, 17).

Volcker declared optimistically that this new technique would also build in a mechanism to guide interest rates in the direction the FOMC wanted:

> The ... possibility is a change in the emphasis of our operations as outlined in the memorandum that was distributed, which I hope you've all had a chance to read. That involves managing Desk operations from week to week essentially, with a greater effort to bring about a reserve path that will in turn achieve a money supply target – which we have to discuss – recognizing that that would require a wider range for the Federal Reserve funds rate and would involve a more active management of the discount rate. And of course the question of reserve requirements and the discount rate change at this point are relevant in that context too. (FOMC Transcript 10/06/1979, 8)

However, doubts remained on the agenda of the FOMC meeting concerning the new technique and how it would influence the Federal Reserve funds rates, the various interest rates in the money market, and inflation expectations. Wallich, for instance, considered the relation between the procedure of money supply and interest rate movements:

> Upward we can control [through] money supply. We're aiming at the tight money supply and that raises interest-rates – or that is what we [are talking about]. But downward has a totally different implication. It involves a signal that we've switched policy and the markets are going to respond accordingly. ... But we need to watch this strategy in terms of what it produces for interest rates and for the exchange

> market so that we don't get surprised by interest rate movements when they could be harmful. (FOMC Transcript 10/06/1979, 19)

Volcker responded that the movement of interest rates, which depends upon the money supply, can neither be anticipated nor controlled:

> Let me just make a couple of comments. I'm not sure it's self-evident that in interest rate terms the new technique is stronger. It may or may not be, depending upon what happens to the money supply. I think that is inherent to the new technique. We will never know the answer, no matter how long we talk, to what the money supply actually will do in coming months. (FOMC Transcript 10/6/1979, 20)

The debate over the adequacy of the new monetary operation, which dominated the agenda of the FOMC meetings between 1978 and 1982, can be headed under central questions, such as the following:

1) How will the banking system make its decisions on liquidity management and excess reserves, and how will this influence interest rates in money markets?
2) Will the new strategy of money supply by operational monetary targets enhance or minimize the uncertainty in the market?
3) Is the new strategy an adequate approach to rebuilding the credibility of the Federal Reserve System?
4) What consequences for the United States and the U.S. dollar can be anticipated regarding domestic and foreign markets?

Volcker pointed out the advantages of 'triggering a faster response' in adapting money supply in the event the economy changed. The outstanding advantage would be that the new technique would be better understood by the market, public, and banks.

Even prior to taking office as chairman, during his time as vice chairman of the Fed, Volcker regarded the new perspective on monetary aggregates – even without precise numerical targets – as the most convincing strategy in times of high inflation expectations:

> I don't think that [money] target itself, though written in our records, is written in heaven, given all the uncertainties that we had when we set it. ... [T]he exact level of the aggregates isn't quite as important to me as the movement on the funds rate. I'd like to make some gesture there. (FOMC Transcript, 3/20/1979, 28–29)

The assumption that by focusing on monetary aggregates the FOMC would also be successful in guiding the economy towards price stability was then repeated by Chairman Volcker:

> Let me try to describe the so-called new system, as I understand it, in an unprejudiced way. ... The base theory of this procedure is that the committee could decide – in this case only through the end of the year – on some monetary supply targets. ... Now, our concept of the process is that those money supply figures that were chosen would be converted into a reserve base number. (FOMC Transcript, 10/6/1979, 24–25)

Volcker admitted that the exact definitions of total reserves, borrowed, and non-borrowed reserves, might be neither convincing nor necessary. Which target should be used? Total borrow? Do we have one reserve target or 'multiple targets'? These and similar questions were put on the agenda of meetings and seen as steps towards the Fed's goal of winning the battle against inflationary expectations. A few months later, Volcker asserted that while the total reserves are not controllable, the non-borrowed reserves are controllable and, hence, were the focus of the new strategy (FOMC Transcript, 1/8–9/1980, 16). In a broader sense, the new technique was declared a new method in decision-making procedure:

> [S]uppose we happen to put a lot of weight on the current projection of the money supply and pick figures that would closely coincide with that. We would then provide, making some assumption on the level of borrowing that seemed to be consistent with the level of interest rates that presumably laid behind the projection of the money supply in the first place – we can't avoid interest rate assumptions the way these things are done – non-borrowed reserves along that path. (FOMC, Transcript 10/6/1979, 25)

Volcker defended the new technique as a means of rearranging the basis of the entire decision-making process of the FOMC, setting the Federal Reserve funds rate in a gradual manner:

> We used to operate with very tiny changes in Federal Reserve funds rate from time to time, or between meetings certainly, and not very large ones even at a meeting. There is no doubt that we have changed; in my opinion, the emphasis is quite different now. (FOMC Transcript 1/8–9/1980, 64)

Furthermore, another advantage was explained: the decision would be made 'in terms of money supply', not in terms of 'interest rate music' (FOMC Transcript 1/8–9/1980, 64). The Feds declared that a shift from concepts of interest rate policy towards monetarist concepts like monetary aggregates or monetary markets would be understood by the public as signal words towards anti-inflationary policies and should therefore direct expectations of inflation downwards. Lindsey et al. (2005, 191) stated, 'This nuance was a significant issue in the minds of many FOMC participants.'

Volcker mentioned several of the disadvantages as being noteworthy. However, he linked these disadvantages to particular cases which could occur, but not to the new technique in general. He specifically pointed to three particular disadvantages: a) the current fragility of financial markets; b) the unexplained determination of money demand and money supply; and c) uncertainty regarding the new monetary operations.

Because of the fragility of the financial market it was presumed that the new technique would minimize the high volatility of the funds rates. Volcker addressed this with several considerations:

> The other element, of course, is that we are not dealing with a stable psychological or stable expectational situation by any means. And on the inflation front we're probably losing ground. In an expectational sense, I think we certainly are, and that is being reflected in extreme volatile financial markets. (FOMC Transcript 10/6/1979, 6)

Volcker expounded further:

> My feeling was that by putting even more emphasis on meeting the money supply targets and changing operating techniques [in order to do so] and thereby changing psychology a bit, we might actually get more bang for the buck. By that I mean our having a more favorable impact on psychology and perhaps a more favorable impact on banks by introducing a little uncertainty per basis point of rise in money market rates than would be possible through the traditional method. (FOMC Transcript 10/6/1979, 8)

This view was supported by another member of the FOMC, Emmett Rice. The new technique would lead to a 'new uncertainty' which was judged to be welcome. The new uncertainty was interpreted as a way of 'cooling down speculative actions and inflationary expectations'. Rice argued in favour of letting the FOMC work against markets. He also

mentioned some risks of the new uncertainty and of this way of acting against the market. Nevertheless, he judged this to be insignificant compared with the advantages:

> I think that if we moved to a technique where we decide what the money supply should be – and we operate directly on the reserve base to get as close to the level of aggregates that we want – we would stand a better chance of producing the kinds or results we would like to see. The good thing about moving to this operating technique is that, contrary to some of the views that have been expressed, we introduce a new uncertainty into the market. I think that's a good thing. The new uncertainty will have the effect of cooling some of the speculative activity and perhaps have an impact on those demands for credit that are based purely on inflationary expectations and on the assumption that money will always be available at any level of interest rates that the Fed tries to establish. (FOMC Transcript 10/06/1979, 22)

The members of the FOMC discussed the fear that the banking system seemed inclined to avoid debt. It would create high liquidity or excess reserves instead of lending money. This could then undermine the goals of the Federal Reserve. A further crucial measure was the setting of the level of non-borrowed reserves which were to be taken as the average of borrowed reserves in recent weeks and subtracting them from the total reserves: '[A] serious disadvantage that has discouraged policy-makers from entertaining such policies in the U.S., however, is the unpredictability of velocity that at times decouples stable money growth from stable income growth' (Orphanides 1999, 32).

With respect to the unexplained determination of money demand and money supply, Wallich drew parallels between the 1930s and his era, the 1970s. He admitted not knowing what the FOMC in the 1930s really wanted to do. The majority of the actions of the FOMC failed at that time because the commercial banks had avoided bearing the risk of lending, having built up high liquidity reserves. The FOMC was powerless. The consequences were a sharp increase of interest rates in the money markets followed by a recession. According to Wallich, these seemed to be analogous to current circumstances. He raised some doubts and objected to the optimism with which the new technique had been introduced in the 1970s. He referred to current criticisms from home and abroad, and explained that reliance on the new technique had been accompanied by neither a common support nor understanding, but

rather by the fear that the United States was returning to the 'rules of the game', that is, to the gold standard and its failures (FOMC Transcript 1/8–9/1980, 7).

Volcker welcomed hearing these criticisms and differing opinions during the FOMC meeting, stating it was necessary to achieve more clarity on the new technique. However several objections remained on the agenda during the following FOMC meetings. Some objections dealt with the presumed inherent relationship between money supply and the movements of interest rates. Other objections were concerned with the interplay between changes of the non-borrowed reserves and its effect on the interest rates in the money market, which were still unexplained. Other criticisms being raised addressed the imprecise definitions involved, the demand functions of the borrowed, non-borrowed and excess reserves and the attempt to calculate each with numbers in order to use them as targets.

Mark Willes expressed his reservations regarding the reaction of the public and the press:

> I'll start out by saying that I don't pretend to understand the procedures, so my comments are probably way off the mark. But the discussion fascinates me. It strikes me very much like the discussion one reads in the paper each morning where people are explaining what happened in the stock market. They always have some specific reason for why the stock market did what it did. I don't think we really know how all these demand functions – for excess reserves, borrowed reserves, non-borrowed reserves – are changing in the short run. ... I feel very [un]comfortable with the situation where we think we can operate on a reserves basis the same way we were operating on a Federal Reserve funds rate basis. I think the two are very different kinds of procedures; we can't move from a federal funds target to a reserves target and make all these very refined calculations and adjustments. (FOMC Transcript 1/8–9/1980, 8–9)

The demand for exact definitions and greater clarity on the new technique – as outlined in the quote above – also underlined the need to step beyond traditional concepts and definitions. Uncertainty was not only in 'the air' because of the expectation of rising inflation but also because of a new terminology. The FOMC changed its technique by creating new definitions of monetary aggregates (for instance M1, M1-A, M2, M2-B), details of which the money market lacked understanding. Additionally, the FOMC itself did not know if and how the markets

understood the new technique. Therefore, an overall lack of common understanding was 'in the air'. At this point, what function could a money growth target have, given the uncertainty of projections and the absence of a clear path? Regarding the procedure of judgment under uncertainty, Volcker stated:

> We live in an uncertain world. And in view of fluctuating projections regarding the trend in the money supply, our first point of judgment would arise – let's say particularly in the present circumstance – because we might get some ease in the money market immediately if we did nothing but follow the path week by week. If we thought we were going to have trouble later because the projection [has money growth] going above [our targets], we would under-supply reserves in the current week to provide some assurance that we're going to cope with the fluctuation later and not have borrowings running ahead of what we'd assumed. ... As the borrowing fluctuates, they would themselves be reflected in interest rates. (FOMC Transcript, 10/6/1979, 25)[4]

Since the problem of inflation still dominated public attitudes and attention, the approach to the new monetary strategy was criticized by the public and economists. Greenspan asked 'whether, if unemployment begins to climb significantly, monetary authorities will have the fortitude to "stick to the new policy"' (*Wall Street Journal* 1979). The historical background of this epoch was the experience of stagflation in most of the industrialized countries, which led to theoretical upheaval and transformed key premises, for instance to the Rational Expectations Hypothesis (REH) (Mayer 1997; Mishkin 1995).

According to the history of macroeconomic theory, we observe that while the macroeconomic literature was mainly concerned with the REH and the 'Lucas-Critique', the literature on the international monetary system was focused on the nominal anchor by outlining different frameworks of international monetary coordination, that is, coordination of nominal interest rates (Muchlinski 1999b). The so-called triumph of the monetarist view over the Keynesian view at that time was primarily based on attributing blame to the Keynesian view and interest rate policy. The signal given by setting the nominal interest rates was interpreted as being misleading to market participants and should have been replaced by a specific signal, that is, a number of the quantity of money, in order to stabilize inflation expectations. The Federal Reserve was accused of having used the Federal Reserve funds rate as

an inappropriate operational target, which encouraged a repeated overshooting of monetary objectives (Meulendyke 1998, 49).

The orientation towards monetarist theory and the vision of steering monetary policy by monetary aggregates was attributed to the spirit of this monetarist 'counterrevolution'. According to the third interpretation, the Federal Reserve had never pursued the monetarist view, since it had already guided monetary policy by setting nominal short-term interest rates. In the literature, the conclusion is that the Fed could not avoid setting the nominal interest rate in order to implement its monetary policy.

Of course, this interpretation is supported by Keynes. In the 1930s, Keynes described monetary policy as follows: 'The banking system has no direct control over prices. ... Nor has it, in reality, any direct control over the quantity of money; ... the governor of the whole system is the rate of discount' (Keynes, 1930, 189). By that time Keynes had already worked out the interdependence of interest rate policy, monetary policy, and exchange rates – four decades before any monetarist attacked the Keynesian theory:

> The short-term rate of interest is easily controlled by the monetary authority, ... because it is not difficult to produce a conviction that its policy will not greatly change in the very near future, and also because the possible loss is small compared with the running yield (unless it is approaching vanishing point). But the long-term rate may be more recalcitrant when once it has fallen to a level which, on the basis of past experiences and present expectations of *future* monetary policy, is considered 'unsafe'. ... (Keynes 1936, 203).

This view is reiterated precisely in the modern view of central banking regarding central bank practice. In the 1970s, the Keynesian view was accused of being an anomaly of macroeconomic theory. Blinder emphasized the importance of interest rates in that period of history, which is also true for monetary policy today because the pervasive uncertainties that surround monetary policy cannot be discussed in terms of the rational choice paradigm (Blinder 1998, 25).

The Federal Reserve 'monetarist experience' was in fact a new approach to the changes of its communication policy. Beyond the new commitment based on the Humphrey-Hawkins Act it was remarkable that the FOMC repeated its efforts to restore a non-inflationary base for economic growth in its statements and releases to the public. 'Was Volcker "a great communicator"?' inquired Lindsey et al. (2005, 227) in

their study. The answer is that Volcker initiated a new strategy of information policy which undoubtedly generated another mode of communicative interaction between the FOMC and the markets.

Although the Federal Reserve cannot be described as 'a paragon of community' (Lindsey et al. 2005) or a paragon of clarity, the textual evidence I present in this chapter shows that new definitions and terminology as well as the FOMC's own considerations of whether and how the public understands what the FOMC is doing or talking about, were the key focus of that new technology. The citations in this chapter are to be read as examples of a very significant epoch of the FOMC's work. The FOMC was concerned with the creation of new definitions and concepts and a distinct approach to a deeper understanding of a highly complex and discretionary monetary policy. The controversy about following a rule or rules based monetary policy was more the focus of the public's commentary than of the sessions of the FOMC itself, because the need to judge distinct situations was uncontested. Also, the FOMC acknowledged discretionary elements of the new technique inevitably connected to it, while the public seemed to expect the new technology to be based on a rigidly fixed rule. It should be noted that the term 'rule' was first of all associated with the 'rules of the game' of the gold standard, that is, with a particular exchange rate regime and monetary experiment in the 1920s and 1930s.

The meaning of the term 'rule' has changed dramatically since then and, in particular, as a result of different uses of the term (Issing 1996). Lindsey et al. (2005, 222) emphasized that the term 'rule' did not always mean what it means today – the Taylor rule or Friedman rule for instance. Apparently Volcker did not use the term 'rule' in the traditional meaning, which might have contributed to the initial widespread confusion in the market. However, Volcker did not provide another definition. He made it clear that following a rule implies the need to base judgments on different circumstances or situations. It is important to acknowledge that the FOMC created the meaning of its new terminology, not new technology, via several adjustments to its implementation. The FOMC transcripts from 1979 to 1983 deliver interesting examples testifying that Volcker responded as cautiously as possible to certain demands for exact or numerical definitions.

The FOMC under Volcker introduced its new technique by an information policy which was itself under construction or should be seen as experimental. It published testimonies, including the speeches of the board members and the Reserve Bank presidents. It opened up new discussions on central banking and monetary

policy in the Humphrey-Hawkins Act. It provided staff reports, bulletins, and articles to the public, and gave media interviews. It initiated a new mode of communicative interactions: 'Officials of the Federal Reserve Bank of New York held separate meetings yesterday with reporters and securities dealers in an effort to clear up some of the confusion surrounding details of the Federal Reserve's anti-inflation techniques announced Saturday. The Fed doesn't plan to be 'rigid or mechanic' in pursuit of bank-reserve targets (in Lindsey 2005, 205).

> 'This may cause some die-hard monetarists to subdue their elation at our change in approach and recall their congratulatory message,' he said. ... When the reporter asked which rates the public should watch for clues to Fed thinking, Mr. Sternlight replied: 'I'm not sure I have a ready substitute to proffer at this point'. He emphasized that 'we're still very much experimental' at this stage. Mr. Sternlight said one key figure the Fed would pay attention to is 'non-borrowed reserves'. But he emphasized that the Fed won't rely exclusively on this and plans to remain flexible in its approach. (*The Wall Street Journal*, October 10, 1979; in Lindsey 2005, 205)

In subsequent interviews, the FOMC avoided specifying rules or definitions of its new technique. Through such conduct, the FOMC obviously disappointed the expectations of market participants because the market had expected to receive exact rules or numerical targets on which the new technique would be based. The opinion arose that the FOMC was trying to play a game against the market in order to fool it. Market participants accused the FOMC of not being predictable:

> 'Anybody looking for a rule of thumb is going to be frustrated', the official said in an interview that sketched a picture of a more flexible – and probably tougher – Fed. 'There are still going to have to be policy judgments made', the official said, indicating the central bank 'isn't going to trap itself by following any rule'. He said the Fed will try to steer between the 'two extremes' of its old practice of inching the Federal Reserve funds rate up and down and 'letting the funds rate go anyplace forever'. (*The Wall Street Journal,* October 10, 1979; in Lindsey 2005, 206)

Lindsey argued that the Federal Reserve Bank began its transparency policy with that monetarist experiment. The question of how and if the

public understood what the new technique implied was placed on the agenda of the FOMC.

Regarding the bond market, the banking system, and their endowments with new credits, Volcker mentioned some restrictions on the bond market and also restricted the access of some of the market participants. He added that a lot of confusion and uncertainty in the markets is engendered by different definitions and concepts of monetary growth rates, and 'all that measures' of reserves and monetary aggregates (FOMC Transcript 2/4–5/1980, 45). Volcker suggested submitting to a press briefing in order to explain the changes of the various definitions in pattern, but this was 'not to give the targets' itself (ibid). A discussion of numerical seasonal targets should not be published. 'If policy fails, we can always revise the seasonal adjustment factors for a while! [Laughter]' (ibid).

Other members of the FOMC supported Volcker in his view that the monetary targets – that is, the numerical targets for M-1A and M-2B – were much more important to explain to the public than the projections of the borrowed and reserve targets. Volcker considered the latter in a more technical way and proposed defining them only in a technical sense. On this point, Bob Black referred to another crucial aspect concerning the discrepancies of private forecasts and the forecasts of the FOMC regarding the prospective level of the Federal Reserve funds rate (ibid). He spoke of the problem that the economic outlook expected a more recessive economic development. The forecast of the Federal Reserve funds rates of 13 percent by the FOMC and of 10 percent by private institutes underlined the distinct views and expectations on the economy both had.

Additionally, John Balles argued for the need to give more attention to the public's perception and to try to minimize these differing views between the private sector and the FOMC via a change in information policy (ibid). He referred to the rise in long-term bond yields as an important indicator of expectations of rising inflation in the market. He argued for the need to face public reaction to the current FOMC policy in order to gain greater clarity on it. The FOMC should figure out if and how the public shared the view of the FOMC regarding the economic outlook, employment, prospective interest rates, and inflation expectations. Balles argued the public's understanding of what the FOMC was doing, or going to do, was of high relevance to the success of the new technique. He also suggested that a broader range of the monetary growth target would provide the Federal Reserve Bank with greater flexibility in its responses to market reactions. The FOMC

needed to face the public reaction because:

> The public pays more attention to what we do than to what we say we are going to do. (FOMC Transcript 2/4–5/1980, 48)

The debates over how market participants perceived and understood the new technique were key issues in the FOMC transcripts.

Larry Roos, for instance, argued in favour of greater openness and a distinct information policy leading to a more flexible response by the market. Market participants did not understand and were hesitant to act or commit themselves to a decision. Roos recommended producing a publication in order to support the market's understanding of what the Fed was doing or going to do:

> I wonder if some of the lack of dynamism or some of the sluggishness in this whole process might not be a reflection of the fact that large segments of the markets aren't quite sure exactly what we're doing. That leads me to the question ... : What would happen if we specifically and publicly described what our paths are – or at least some of our paths – so that the market could adjust to what they know our game plan really is instead of feeling that there's some vague thing going on that they're not sure of. Their reluctance or lack of reaction may be due in part to the fact that people don't want to stick their necks out in the markets until they really know what our reserve path is or what our monetary base path is. What are the negatives to defining those things publicly? (FOMC Transcript 1/8–9/1980, 9)

Volcker responded with caution to these requests for greater openness and a switch to another information policy. He expressed doubts that a disclosure of information – the adequacy of which the FOMC was still debating – would be very edifying to the public. To put it another way, he rejected the pretence of clarity or exactness on issues which were anything but exact or clear at all. He tried to balance the different arguments and considered different perceptions. He accepted some suggestions made about the public's concern over inflation and how that concern differed from the view of the FOMC. He also admitted that he perceived 'an immense amount of confusion in the minds of the public' (FOMC Transcript 4/22/1980, 22):

> Let me distill a bit what I think I'm hearing and what I'm thinking. The big change we've had – though we've had a lot of changes since

> the last meeting – is that we certainly have some evidence of economic decline that we didn't have before. I for one still think it's a little premature to make very conclusive judgments about what kind of a recession we're going to have. I'd say also that it takes a little while to meet the definition of a recession. We've been fooled before. (FOMC Transcript 4/22/1980, 21)

Volcker behaved with the utmost caution when it came to traditional and new definitions and concepts. Since the crucial economic indicators – like tax refunds and prospective consumption, the car business, imports and exports, and the credit situation – were seen as an atypical pattern of economic performance, he pointed to the uncertainty surrounding the FOMC's decision-making process. Nothing could be judged as familiar or known for a long time:

> All I'd say is that there is some uncertainty, particularly when one looks at the other side and the inflation side. Two months ago everybody was going for leather and wanting to buy in anticipation of inflation; I think that mood has changed. ... And looking at a longer-term perspective, there's no question in my mind that in considerable part inflation is what got us into this dilemma. And it is recognized as a major problem. ... In that sense I don't think we're in a situation where there's any course of action that is risk-free or even in some sense a 'winning' course of action because there's a lot to be lost by a resurgence in inflationary expectations and there's a lot to be lost by accelerating the recession; and I'm not sure that there's any real room between those two contingencies. It has been implicit in everybody's comments that we have to keep our eyes on both [inflation and recession] as best as we can. (FOMC Transcript 4/22/1980, 22)

The open questions regarding these unknown patterns of economic indicators led to extensive contributions in economic literature, indicators later defined as 'stagflation' – the coincidence of inflation and economic stagnation. This new phenomenon occurred at the time the 'monetarist experiment' was undergoing implementation. It was not only hard to figure domestically in the United States, but also internationally. Neither the FOMC nor Volcker could have known what the domestic or international markets were anticipating at that time because all industrialized countries were confronted with this new problem.

The economic indicators represented no overall pattern. Inflation, for instance, had risen during the previous months, and also indicators

of recession had been significantly driven upwards. Volcker referred to the economic indicators as 'attitudes' which fluctuate 'rapidly'. It was precisely these unexplained attitudes and behaviours of the financial markets which created additional uncertainty in the decision-making procedure:

> I do have the feeling in listening to some of the different economic forecasts and comments that our staff, which is sometimes accused of being Keynesian, feels more constrained by the money supply assumption than more monetarist oriented people. And that accounts for some of the differences in view. Assuming that we're all intelligent people around the table, [given the] differences in outlook that have been recited, I don't see how anyone can come to any opinion other than that there is a great deal of uncertainty in this forecasting business. (FOMC Transcript 2/4–5/1980, 44)

Volcker raised the prospect of international problems which were of concern to the central bank's responsibilities because they were beyond the scope of monetary policy and, hence, the FOMC. He said:

> In terms of what we have accomplished or have not accomplished in monetary policy in recent months ... and have suffered a grievous blow from everything that has been going on internationally – whether you're talking about oil prices, or Iran, or Afghanistan and concern about defense spending. There is nothing much we can do about that, but I think in some sense we're back to square one or worse in terms of the public's concern about inflation. ... In fact, I don't think we can deal with the risk of a downturn and ignore the inflationary side, because they're part of the same parcel in some sense. (FOMC Transcript 2/4–5/1980, 44)

The Federal Reserve was aware of both higher prices and unmistakable hints of a recession followed by a higher level of the Federal Reserve funds rate. The FOMC's conference on March 7, 1980, threw light on the procedure of agreement to raise the upper limit of the Federal Reserve funds rate while the lower limit would remain as it was. The divergences were assigned to the lower limits. While some members voted to enlarge the range for the movement of the Federal Reserve funds rate from 14 to 18 percent to the range of 11 to 18 percent, others argued this range was verging on the absurd. The lower limit of the Federal Reserve funds rate indicates the willingness of the FOMC to keep the monetary aggregate

in line with the posture of the monetary aggregate targets. It was argued that 14 percent rather than 11 percent was a proper lower limit. With a recession 'in the air', this level of the Federal Reserve funds rate also threatened a highly probable credit crunch and higher unemployment. Chuck Partee at the FOMC conference call in March 1980 argued:

> It has called for higher rates and could call for still somewhat higher rates in the period to come and we ought to have room to move if that's necessary. Looking a littler further ahead, as the financial panic leads to deep recession I think we'll need considerably lower rates and we ought to keep open the room for doing that in order to get the aggregates that we've said we were going to get. (FOMC Transcript 1980/03/07 conference call, p 6)

Volcker responded:

> We'll strike that last comment – [the 'recession'] word in that last comment. (ibid)

According to the debate in the FOMC the increase of the Federal Reserve funds rate would underline their responsibility for an anti-inflationary policy. The effects on the interest rates and the recession in the United States as well as in all industrialized countries were significant in the following month (see Lindsey et al. 2005):

> The Federal Reserve took short-term rates from around 11 percent in September 1979 to around 17 percent in April 1980. This was the most aggressive series of actions the Federal Reserve has ever taken in a short a time, although the roughly 5 percent increase in short rates from January to September of 1973 was almost as large. (Goodfriend 1997, 13)

Against the historical background outlined above, the Federal Reserve had started to combine the new monetary technique with a new commitment to report its decision to the public. The Federal Reserve tried to combine the new commitment with the strategy of 'base-drift', that is, of changing concepts and definitions to be reported to Congress. A 'base-drift' emerges if there is a deviation from the monetary policy goal. The public had already been confused by the declared new monetary procedure, therefore the new commitment to reports based on changing definitions led to a greater uncertainty and confusion.

However, I think the textual evidence of the debates in the FOMC do not support the interpretation that the FOMC deliberately tried to confuse market participants by its 'base drift'.

While Poole proposed the Federal Reserve should enlarge the corridor of the monetary target in order to avoid big jumps, Goodfriend identified the roots of the 'base-drift' as a credibility problem of the Federal Reserve (Goodfriend 1989; Poole 1996). The Federal Reserve was irritating the public. In contrast to Goodfriend, Charles Walsh diagnosed that 'base-drift' was an accurate answer to the monetarist view of monetary policy which systematically ignores changes in money demand (Walsh 1986). Only within a monetary view is such a 'base-drift' credible because it is required:

> The most likely explanation of these changes is political rather than technical. The Federal Reserve had decided that inflation had reached crisis levels and had to be controlled at almost any cost. As many authors have noted, the new operating targets were a useful smokescreen that obscured the link between the Federal Reserve's actions and the painful increases in interest rates. (Bernanke/ Mishkin 1992, 12)

Nevertheless, the details of 'this useful smokescreen' (ibid) remained obscure for reasons due not just to the complexity of the monetary technique, but rather to the lack of knowledge concerning these new techniques which the Federal Reserve itself was confronted with. To declare a monetary growth rate strategy and also declare the replacement of the Federal Reserve funds rate by the non-borrowed reserve was without doubt a clear goal, but there was no way to implement such proposed policy rules (for reasons outlined in the previous pages). Although it is argued in the literature that the Federal Reserve did not explicitly explain the details of its declared monetary strategy, it should be noted that the Federal Reserve's information policy was as precise as it needed to be regarding the function of the Federal Reserve funds rate which was not replaced.

With regard to the question I raised at the beginning of this chapter, 'monetarist experiment' or 'smokescreen'? Brunner (1981) described the period of the Federal Reserve, using the terms 'mystique', 'secrecy' and 'central banking as an esoteric art' to point out its missing ability or willingness to remove the veil of deception. According to Brunner, the central bank's mystique arises out of its avoidance of clear descriptions of communicative interaction with financial markets. Against the

historical background as outlined on the previous pages, the Federal Reserve's information policy was restricted by its attempt to act independently from policy, and its limited knowledge of the newly introduced technique (Muchlinski 2001a).

Lindsey also admitted the existing lack of clarity of the new techniques and methods regarding the concepts needing to be defined and applied in targeting the money growth rate. The terms and concepts were not precisely defined: for instance the concepts of 'rule', of 'discretion', or even 'monetary target', 'monetary aggregate', 'M1', 'M2', and so forth. Lindsey posited that the term 'mystique' is embedded in the monetarist experience and linked to that context. Nevertheless, Lindsey accepted that the Federal Reserve and Chairman Volcker were communicating in an adequate way regarding the difficult tasks of targeting and defining the monetary growth rate by steering the money supply. As the textual evidence suggests, this experimental episode at the end of the 1970s, and the FOMC's inclination to 'monetary mystique' and 'secrecy', were linked to the problem that the FOMC had difficulty anticipating the reactions and the understanding of the public to its disclosed information (see also Tabellini 1987):

> The FOMC argues that the Directive is written in 'terms of art' that are vague and cannot always be accurately interpreted. But this problem could be dealt with by making the language of the Directive more explicit and intelligible. ... The FOMC argues that because it has no experience predicting market response with disclosure of the current Directive, policymaking with disclosure would be difficult. (Goodfriend 2003, 173–189)

The process of working out the meaning and understanding of information requires interaction with the audience to which the information is addressed, for instance the media, analysts, politicians, and agents of financial markets. The audience, therefore, is interested in different information. Whereas politicians are focused on information related to political matters, the analysts pay more attention to information relevant to the movement of certain economic variables.

Greenspan explained that the understanding arises out of the communicative interactions between both inside analysts of the Federal Reserve and outside analysts, that is, key players of the financial markets. The results of this information are used to refine the FOMC model to estimate and judge the likely results of its policy – the understanding and meaning. Greenspan provided a description of 'risk management

policy' by emphasizing that in times of panic, recession, or liquidity crunch, the central bank should immediately lend liquidity 'to all that bring good securities quickly, freely, and readily' (Greenspan 2004, 38). It detracted from the wisdom of the 'open window policy' (Bagehot, 1873), introduced as the iron law of central banking not to act in that way.

Blinder emphasized that whether or not Volcker did pursue the declared targeting of monetary growth rate, 'money-supply targeting can be hazardous to a nation's health' (2005, 4). Blinder argued that Volcker and his colleagues overlooked the fact that the success of money policy depends on a central bank's *interactions with the markets*. Therefore the so-called monetarist experiment could be described as an epoch in which the Federal Reserve Bank was becoming suspect because of contradictions which arose out of its declared strategy, its perceivable – and contradictory – monetary practices, that is, interest rate changes, and also perceptions of all this by agents in the markets, who demanded a consistent explanation of what was going on instead of such a 'wishy washy' strategy.

Blinder (2006, 12) maintained that the metaphor used by Brunner merely depicted a caricature of central banking which encapsulated the key message of that time: 'Say as little as possible, and say it cryptically. Attitudes toward transparency have changed dramatically since then, and central banks around the world have opened up.'

Blinder emphasized that the Greenspan era provided plenty of examples of consistency in the meaning and understanding of the central bank's policy. The central bank let the bond market do its job regarding expected changes in interest rates. Interaction also implies that the market does not intervene, that is, does nothing. In describing Federal Reserve policy from January 1996 to June 1999, Janet Yellen and Blinder once labelled this non-active behaviour, or silence, as 'forbearance'. Although the unemployment rate fell under the Non-Accelerating Inflation Rate of Unemployment or NAIRU rule, the Federal Reserve did not raise the Federal Reserve funds rate. From this it can been seen that remaining passive and silent can be an accurate way of acting and can have greater results than trying to act in the ways described in economic textbooks (Blinder and Reis 2005).

Central banks at times practice not speaking for a while in order to avoid speculation about changes of interest rates (Ehrmann and Fratzscher 2008). These times of selective disclosure policy or relative silence – lasting about seven or eight days – concern the monetary policy issues before the meeting and shortly after the meeting of the Monetary Policy Committee (MPC) of the Bank of England and FOMC

and are described as the 'purdah-guideline'. The authors emphasized that the effect on market variable in the purdah period depends on the characteristics of the last statement in the pre–purdah period and the statements during the post–purdah period. The statements during the purdah period are defined as conditional statements according to the effect measured by changes of the levels of interest rates in the money markets. In other words, the mode of the communication policy of the MPC and FOMC is a *changing one*.

In my view even the terms 'mystique' and 'communication' seem to lack clarity. Whereas Brunner associated 'mystique' with the missing ability and willingness to explain monetary strategy in detail, I would rather propose defining 'mystique' as the central bank's way of communicating with the market in a manner different from what was then expected. We are used to saying 'X is a mystique' because we have no understanding of what is going on, and perhaps we do not want to understand it. The proposition 'X is a mystique' also indicates something that is supposed to contradict our norms. This is also true regarding the 'esoteric nature of the art' of central banking. Therefore, 'monetary mystique' cannot be assigned to non-communication but rather to the view that the meaning should be discovered beyond the context in which the action takes place. The meaning of words or sentences and of understanding is rooted in communicative interaction, or action (respectively non-action) in context. It was Paul Watzlawick and his co-authors who revolutionized thinking in terms of communicative interaction (Watzlawick, Beavin et al. 1967). Their important conclusion is that *it is not possible to avoid communication*. Even if a central bank hides itself behind 'the secrets of a temple' or 'mystique' or 'silence', it nevertheless adheres to a certain kind of communicative interaction or style, because a so-called non-action is also to be perceived as an interaction, that is, the avoidance of interaction. It is additionally important to accept the relevance for economics of this research in order to perceive the differences central bank interactions make and to illuminate the need for shaping a central bank's actions.

To summarize: 'Monetary mystique' refers to the monetarist experiment. 'Monetary mystique' is not identical with non-communication, but rather addresses the view that meaning and understanding do not arise *beyond* interaction with agents of the financial markets and the central bank. Moreover, 'mystique' is not identical with 'secrecy'. 'Secrecy' is important according to the modern paradigm of central banking. As I will outline in the next chapter, the achievement of transparency and credibility can be defined only as a *degree of transparency* or *degree*

of credibility. Therefore 'secrecy' is inherent to both. The terms 'mystique' or 'monetary mystique' coined by Brunner imply the assumption that the meaning and understanding of actions arise *beyond the context of central bank practice*. It is only this assumption that generates 'mystique' or 'monetary mystique'. A central bank which is supposed to act beyond the market has no success. The reason for this is simple: every action or non-action, any decision or non-decision, manifests itself within a particular pattern of interaction. It is not credible, then, to posit that a central bank acts as an isolated institution or with a hidden agenda.

1.2 The new paradigm of the modern central bank

> A central bank is invested with enormous power over the economy; and, if it is independent, that power is virtually unchecked. This authority is a public trust assigned to the bank by the body politic. In return, the citizenry has a right to expect – no, to demand – that the bank's actions match its words. To me, that is the hallmark of credibility: matching deeds to words. (Blinder 1998, 63–64)

This chapter outlines the implications of the modern paradigm of central banks, which can be characterized by the consideration 'matching deeds to words' (Blinder 1998) and 'we do what we say and we say what we do' (Issing). This formulation concerns the evolution of the meaning and understanding of the communicative interactions of central banks within their politico-economic and social context. I should immediately point out that the concern of this book is not, in fact, with questions such as *why*, *how*, *where,* and *when* a central bank should be transparent. Extensive work has already been done on these issues, which need not be repeated here (Blinder et al. 2008; Thornton 2002). To sum up this issue (which has opened up an extensive debate in the literature), transparency should enhance the effectiveness of monetary policy, that is, price stability, growth, and employment. Some authors maintain that the announcement of the Federal Reserve funds rate, being crucial to transparency, enhances understanding of the central bank's strategy and, hence, its credibility with respect to low inflation (Ferguson 2001; Poole 2003). Others argue that communication creates transparency (Bernanke 2004a; Blinder et al 2001; Fracasso et al. 2003; Freedman 2002; Friedman 2003; Jansen and de Haan 2006; Kohn 2005a; Muchlinski 2005; Schmidt 2005; Schmidt and Ullrich 2006).

There are comprehensive volumes in the current literature on the subject of transparency, dealing with its various aspects in great detail. Most are concerned with the considerations of a central bank's information policy regarding the political, economic, procedural, policy, and operational dimensions of a central bank (Cukierman 2002; Eijffinger and Geraats 2002, 2005. Information policy as a crucial component of transparency is also expounded on by authors particularly concerned with forecasting (Berger, de Haan and Sturm 2006; Chortareas, Stasavage, and Sterne 2002; Ehrmann and Fratzscher 2009; de Haan and Sturm 2009; Ullrich 2006). Expected changes in the Federal Reserve funds rate affect the prices of bank loans, bond rates, and mortgage rates and, hence, will in the long-run influence house prices, wages, and expectations about inflation in the economy. Therefore, as a means for an improved information policy, transparency is welcome. A few contributions focus on the institutional framework of central banks and how transparency could improve the efficiency of monetary policy (Amtenbrink 1999; Cecchetti and Krause 2002; Issing 2008).

Since the transparency of a central bank (i.e. an institution) is tied to its objectives and its mandate, the question of *how* a central bank discloses information to the financial markets has been discussed (Poole, Rasche, and Thornton 2002). Some authors draw attention to different forms of articulation, for instance written information, upon which the central bank relies when giving information to the public (Fracasso, Genberg, and Wyplosz 2003). Other contributions focus in particular on the decision-making process, for instance Blinder and Morgan (2005), and Ehrmann and Fratzscher (2005b). However, I will refer to some of these prior contributions because the new paradigm cannot be discussed without them. In my view the consideration 'matching deeds to words' and 'we say what we do and we do what we say' is the *key* concept to understanding a central bank's transparency and communications. This key concept should not be restricted to questions of information policy, but rather includes communicative interacting and understanding. For reasons I outline in this book, I assert that meaning and understanding are rooted in the context, in the mode of communicative interaction. In my view, the new paradigm of central banking implies a compelling need for the development of a theoretical approach to drawing attention to language activities, meaning, and understanding. A central bank signals its verbal participation within a context and reflects the reciprocal relationship with the market, which must be interpreted. Credibility and transparency are connected through the use of language or the way of acting, but not by a supposed

mechanical procedure (Muchlinski 2002a, 2005, 2008). Transparency is linked both to the communicative interactions of the central bank with the financial markets and to the perception of these interactions by agents. Since the concept of transparency is not ontologically definable like the concept of a stone or car, for instance, an institution cannot be transparent *by itself,* given the fundamental research of cognitive sciences. The concept of transparency and the meaning of a transparent central bank are basically linked to a person's perception, which means in terms of the financial markets and central banker, to the *perceived* transparency of the central bank. As Issing (2005a, 504) emphasized:

> [F]or the reality one perceives really depends on how one looks at it. If anything can be learned from Alice's Adventures in Wonderland, it is surely this. ... Buiter is therefore not alone in suffering from cognitive dissonance and bafflement.

I propose to define transparency as a result of verbal and non-verbal interactions and of reciprocal perceived reaction by the central bank and the agents in the market towards the changing parameters of the context. Since transparency is not ontologically definable it always implies an interactive process, dialog, or communicative relation. Therefore, transparency also implies misunderstanding or miscommunication (Dascal 2007). Blinder (2004, 6) argues: 'I will say that a central bank is transparent if its actions are "easily detected", its policies are "readily understood" and its pronouncements are "free from deceit".'

I would like to add that being readily understood requires pronouncements to be expressed in everyday language and not in a coded language. Contrary to a model world, transparency in the modern view of central banks refers to the understanding of verbal and non-verbal interactions. In a mechanical analogy the expectations and preferences of market participants are modelled as being driven by fixed rules and as encapsulated mechanical standards. Transparency and the effectiveness of monetary policy are not results of a deductive reasoning based on the stimulus–reaction of a model world in which the policy ineffectiveness proposition, combined with the premise of the neutrality of money, dominate reasoning. In such an artificial world interaction is not necessary; moreover, pronouncements, language, and communication are meaningless. From the viewpoint of effectiveness and democratic accountability, economic preferences are lexicographic. According to the modern view of central banking, transparency and credibility are rooted neither in model premises nor in deductive reasoning: rather,

both concepts are linked to the mode of action, that is, to the use of language. The Federal Reserve Bank's way out of 'monetary mystique' documents that it has already turned to giving attention to this issue, as Ferguson acknowledged:

> The language indicates the Committee's sense of the balance of risks in the outlook against the background of the Committee's long-run goals of price stability and sustainable economic growth. Specifically, it indicates whether the Committee believes that the risks are 'balanced with respect to prospects for both goals', 'weighted mainly toward conditions that may generate heightened inflation pressures, or 'weighted mainly toward conditions that may generate economic weakness.' (Ferguson 2001, 5)

Transparency is defined neither in absolute terms nor in itself. This concept encompasses different dimensions of central bank practice. There is a consensus in the literature that central banks need to talk about their objectives and methods, that is, forecasts, models, tactics, and decisions. As Greenspan (2001a) emphasized:

> To earn and maintain that trust, the Federal Reserve must communicate to people about what we do and why we do it. Outreach efforts such as this are important because a central bank in a democracy depends on the trust and confidence of the citizenry. These displays represent one innovative example of how the Federal Reserve fulfils its responsibility to reach out and educate the public about the important mission and work of its central bank.

Poole (2003) put it thus – 'How, not whether', and went on:

> It is hardly surprising that central bankers are more talkative than they were just a decade or so ago, and more concerned about how to improve transparency and communication with the market. Perhaps only one issue is settled: Transparency is important but is hard to accomplish because miscommunication is so easy. Clearly, more talk does not necessarily mean greater transparency.

The ongoing discourse deals with transparency as a demanding task for any independent central bank, indeed for any public institution in a democratic society. As far as it concerns the various tasks of a central bank, its goals, methods, decisions, and decision making,

transparency implies attention to the *degree of transparency* which supports the central bank's efforts to be effective and to fulfil its mandate. A demand for full transparency makes no sense to those authors who adhere to the modern paradigm. The step towards a greater transparency is neither a shift towards full or optimal transparency nor towards a simplified view on how a central bank is aiming to exercise its mandate. The road towards transparency implies the continuity of communicative interactions by the central bank in trying to make itself understood and to grasp how the agents of the market understand the information released by the central bank. Issing (1999, 507) has stated that,

> complete transparency of the underlying information set, as well as the thinking and ulterior motives behind central bankers' decision, is logically and practically impossible to achieve. ... This reflects a deeper (philosophical) recognition of the limits of knowledge and the impossibility of providing and communicating anything like a full description of reality: Reality is never transparent. What we see from any one angle is always only part of the picture'.

Issing also shed light on the role of perception and understanding. At this point an informative discourse between Buiter (1999) and Issing (1999) brought to light the awareness that the meaning and understanding of the concept of transparency and accountability is rooted in different views *on how* the institution – the central bank – acts or should act and be regulated in praxis. A central bank is based on constitutive laws. However, as the discourse on credibility and transparency underlines, the performance of an institution cannot be established solely or even mainly through laws. The performance and acceptability of an institution arises from its practices and its social acceptance, hence the interdependence of agents, structures, and contexts which are configured by people's communicative interaction. Referring to Buiter's demand for an enlarged information policy in the European Central Bank, Issing argued:

> [M]ore words do not necessarily mean more information, and more information does not necessarily and by itself contribute to greater clarity. ... Transparency could perhaps best be understood not as an attribute *per se*, but the degree to which we do what we say and say what we do[,] ... whereas accountability means we do what we are supposed to do. (Issing 1999, 508)

Buiter put forward the demand that transparency must be the response to the public's questions and its right to be informed by the central bank. The question remains as to where to draw the line between the public's right to know and the transparency and accountability of an independent central bank. The public's right to know does not reveal *if* or *what* the public actually understands. Although exponents of the modern view have endorsed the development of communication between a central bank and financial markets, they have kept a distance from the view that a central bank should also reveal its intention. Concerning the need to also communicate a central bank's intention, they have argued for caution:

> For stock markets, one argument is that communicating intentions on the future path of interest rates could go a long way toward stabilizing expectations. ... Hence, noting that central banks do not really have any information advantage over markets, we remain agnostic on the desirability of communicating such intentions. (Blinder and Goodhart et al. 2001, 16)

Given this quotation, it should be noted that communication is not tantamount to revealing one's intention. Announcements or communications reveal neither intentions nor thoughts. It does not make sense to insist that a central bank should communicate its intentions – for reasons I will explain in Chapter 2. If one talks about the intention of XY, one has to be aware that the intention is embedded in a context. Intentions are not to be interpreted as mental states. The question then arises: why shouldn't a central bank talk about considerations which are related to this context? The context surrounds the actions of a central bank and also of the market participants. A central bank should aim to share with the market its considerations of the context and its perceptions of the future.

The demand for a greater transparency does not mean that a central bank should act as if in a glass house. Therefore, 'secrecy' is needed – a term inherently connected with 'creative ambiguity' (Blinder and Goodhart et al. 2001, 13; Issing 1999). A major concern of the Volcker regime was to defend its independence against influences by politicians and the public. The FOMC was trying to develop a strategy of communication which was compatible with its need for secrecy. The strategy of 'base-drift' is interpreted in the literature as 'constructive ambiguity', hence as a part of a central bank's strategy to act *through* the market. This strategy can also be described as 'creative ambiguity'.

Lindsey (2005, 229) introduced the notion that 'constructive ambiguity', as linked to the Volcker era, is neither identical with 'opaqueness', nor with 'non-transparent'. At that time, the Federal Reserve experienced how to act with limited manoeuvrability regarding two dominant paradigms of the time: monetarist and Keynesian approaches to monetary policy. Lindsey emphasized that 'constructive ambiguity' and 'mystique' have acquired a particular meaning for central banks as a result of this era. I propose interpreting this as protective behaviour in order to proceed with an institutional task that cannot be implemented if that institution acts as if in a glass house (Muchlinski 2005). I would like to add that the meaning of these terms is linked to certain circumstances. A good example of how the term 'constructive ambiguity' has accrued its meaning can be shown through a reading of the transcript of the FOMC conference call on June 23, 1983. The FOMC had declared that it was targeting the non-borrowed reserves and monetary supply growth rate. The debate in the above conference call was about the current borrowing level, which was higher than expected, and its implication for the Federal Reserve funds rate. However, it was decided not to publish estimations of the borrow level. The central issue of the conference call was whether a required change would be in line with the published directive or not:

> Vice Chairman Solomon ... 'I think it's because we never mention in our record, as I remember, what the borrowing assumption is'.
> Chairman Volcker ... 'Oh no, we would not cite that anyway. It would be some language to the effect that we're operating consistently with a slight increase in reserve pressure. That's all it would say'.
> Vice Chairman Solomon ... 'Okay, if it's not published, it's all right. But if it were to be published, then that would sound like a further increase in restraint and that is beyond what the majority decided last time'.

Volcker made an attempt to balance the considerations of the members of the FOMC meeting regarding the existing and already published directive. As long as suggested changes remained on the bottom line of the directive it was not required to rewrite the directive.[5] Broadly speaking, Volcker preferred to inform the market of the decision-making procedure by way of a 'reconfirmed' procedure, or as based on consultations, because it was important to defend the existing FOMC directive. It was assumed that changes in the directive were interpreted by the public as serious changes and, hence, grave deviations. The FOMC

became concerned about losing its credibility:

> Chairman Volcker ... In that connection, what I would be inclined to do – although it could be done another way – is not, as you say, rewrite the directive because I think this is generally within the scope [of the existing directive]. But I would include in the written record that there was a consultation and that we confirmed that a slight increase in pressure was appropriate.

Regarding the argument of Vice Chairman Solomon, as cited above, Volcker made clear:

> No, it [further increase in restraint] would be stated as consistent with the directive. And we have a directive that says 'slight increase'. All we're doing is consulting about what a slight increase is, in these terms. I think it's consistent with what we've done at times in the past. As I say, we have alternatives all over.

The alternatives – further consultations or a complete publishing – were also discussed and carefully weighed. Volcker was not convinced of the need to go public with a comprehensive pronouncement containing all the details of the considerations, but this did not mean he objected to transparency or communication. Regarding the structures of the arguments put forward on the 1983 conference call, which can roughly be interpreted as being representative of argumentative traits of the Volcker era, I propose that Volcker tried to safeguard the FOMC meetings from the glare of public scrutiny. This strategy might be interpreted as a plea for a degree of transparency.

The Federal Reserve implemented 'constructive ambiguity' as an attempt at setting an accurate interest rate. This echoes the characteristics of the central bank's landscape, that is, uncertainty. However the question of whether 'constructive ambiguity' is a correct or useful response is still open to debate. The roots of 'constructive ambiguity' are found in the Volcker era. For example, the outlined debate at the conference call on June 23, 1983, focused on the need to be as transparent as possible while avoiding absolute transparency. The need for a degree of secrecy, or the plea for a degree of transparency, was mentioned as being essential for the FOMC to implement its strategy:

> Chairman Volcker ... That is my instinct. I don't know quite why I feel that way, but it just seems natural to say we have this under review.

> We have a pretty vague directive, so we're just indicating publicly that we've kept it under review between meetings and reconfirmed the idea of a slight increase in pressure. But the emphasis would be on 'reconfirmed'. (ibid)

Volcker emphasized the importance of informing the market that the FOMC is concerned with issues also deemed to be relevant to the market. He pointed to selective information as a way of letting the market know what the FOMC was debating. However, this strategy was interpreted as ambiguous:

> Chairman Volcker ... Any other comments? In the absence of a comment I will interpret it as a consensus, which is the way the record of the consultation will be written.
>
> Mr. Guffey ... Mr. Chairman. Roger Guffey. Do I understand that what you plan to show publicly is that the Committee met and confirmed the slight firming that has already taken place?
>
> Chairman Volcker ... I wouldn't word it like that way. I would just say that we met, we reviewed the business situation and the strong news that was reported. We reviewed the aggregates and they looked a little stronger. In the light of all these facts, the Committee consensus was to confirm its decision that a slight firming in reserve pressure is desirable.
>
> Mrs. Teeters ... You're not going to take a reported vote on it?
>
> Chairman Volcker ... No, I wouldn't have a vote. It will just be reported as a consensus that a slight firming was consistent with the directive we already have.
>
> Mr. Guffey ... What has already happened?
>
> Chairman Volcker ... Well, in fact, it has already happened, but his. ...
>
> Vice Chairman Solomon ... Well, I must be dense. It seems to me that what you're doing is leaving it open to ambiguous interpretation, which may be just as well. But it could either be a slight firming, which doesn't go beyond the firming that was in the last directive, or it could be a slight additional firming even though it's still consistent with the last directive. Am I correct that it is open to both of those interpretations?
>
> Chairman Volcker ... I think probably so, and I'm not sure I see the damage in that ambiguity.
>
> Vice Chairman Solomon ... I'm not sure either, but I think it is ambiguous. Okay. ...

Chairman Volcker ... Not hearing any other business before the house, we will stop. Thank you.

Vice Chairman Solomon ... Mr. Chairman, your voice fades. The Washington end fades very, very frequently. Maybe somebody ought to take a look at the system again.

Chairman Volcker ... We're going to take a look at the system for various reasons. The more we look at it the worse it seems to get. But we'll try once again.

Vice Chairman Solomon ... Is that the Federal Reserve System or the communication system?

Speaker (?) ... Both!

Chairman Volcker ... That comment refers to the communication system. Okay.

End of the session (FOMC Transcript June 23, 1980).

From today's viewpoint there is a consensus in the modern central bank literature that a central bank cannot disclose all information to the public, or talk about every decision or the decision-making process needed to achieve its mandate. In principle central banks should be transparent about their decisions and the proceedings of monetary policy meetings as well as about their own views of future developments. Transparency and credibility do not focus merely on providing or maximizing information. Since both concepts can only be defined by a *degree of transparency* or *degree of credibility*, then *secrecy* still remains as the inherent implication of both concepts. 'Secrecy' is not identical with 'mystique' for reasons I outline in this section. Secrecy is still required for special issues of central banking as empirical findings have suggested.

A central bank must maintain a degree of secrecy surrounding its relations with the commercial banks and the government. Transparency is only achievable to a certain degree. Therefore, secrecy will always be an inherent factor in the pursuit of transparency. With respect to the experiences of the Volcker era outlined in the previous chapter and above, central banking is seen as an interactive procedure between the FOMC and the financial markets. Therefore I propose to connect 'secrecy' and 'creative ambiguity' with being elementary to a transparent monetary policy. 'Secrecy' and 'creative ambiguity' is an appropriate response to certain confidential information within the financial market and to the need to interact with financial markets.[6]

As already summarized with regard to the modern view of central banking, monetary policy *cannot* be successful as a measured acting

against the market. The success of a monetary policy and the implementation of its mandate depend on a central bank's capability in interacting with the agents in the market convincingly. Therefore, the central bank's way of acting is in practice subject to scrutiny and perception (Friedman 2003). Any change of the Federal Reserve funds rate, that is, the nominal short rate, will change other economic variables with a longer lasting horizon than the market normally focuses on. The monetary transmission channel is driven by the changing expectations of market participants. The focus of central bank transparency must be concentrated on this expectations-building process in order to influence its long-lasting horizon of price stability:

> With a more transparent central bank, we argue, market expectations that are so critical to the transmission of monetary policy – e.g. through the term structure of interest rates, the reactions of stock markets and exchange rates, and wage and price setting – will reflect policy changes better and faster. (Blinder, Goodhart 2001, 2)

Focusing on the expectations-building process also implies investigating the interdependence and communicative interactions between the Federal Reserve Bank and agents in the markets. A central bank's power determines the short-term interest rate, whereas the long-term interest rate is in fact the crucial aspect on which market participants place their attention. As Blinder (1998, 30) expounds:

> The interest-sensitive components of aggregate demand react mainly to the real long rate while the central bank controls only the nominal short rate. In other words, the interest rate that the central bank can control doesn't matter (much), and the rates that really matter cannot be controlled.

Of course, this wisdom has been acknowledged for a long time, as the reference to Keynes in the previous chapter shows. Nevertheless, during the so-called monetarist experiment, many tried to ignore it. According to the FOMC transcripts from the Volcker era, the public did not trust the declared policy of substituting nominal interest setting by monetary growth rate targeting. Discussion of the effects of communicative interactions has caused the scientific community to become wary of traditional concepts of interaction in relation to economic institutions. In guiding the expectations of economic agents, a central bank is part of its own backdrop because central bank communications and the policy

of information disclosure concerning its own risk assessment – by, for example, the Federal Reserve – are interpreted as self-commitments of the central bank. More precisely, the central bank aims at sharing expectations with the agents of the markets focusing on its mandate.

The reason for this is that a central bank's power is asymmetric. It is strong verses the market in the case of a strategy of 'tightening money', whereas it is weak in the case of 'easing money'. A central bank cannot implement a policy of easing money in times where the agents of the markets do not possess an optimistic view on the economy. If a negative 'state of confidence' (Keynes) runs through the market, the central bank is weak in its capability to influence market expectations.[7] The real demand for guiding market expectations by central banks suggests a strategy which cannot be rooted in a uniform model or rigid rule. Such a rigidly fixed rule is, for the sake of simplification, identical with the assumed cognitive capacity of market agents (Greenspan 2003; Issing 1996; Muchlinski 2003a, 2003c).

Bernanke (2004a), among others in the literature on central bank communication and transparency, gives great attention to the question of whether a fixed rule implies higher effectiveness of monetary policy:

> The problem is that a number of contingencies to which policy might respond is effectively infinite (and, indeed, many are unforeseeable). While specifying a complete policy rule is infeasible, however, there is much that a central bank can do – both by its actions and its words – to improve the ability of financial markets to predict monetary policy actions. With respect to actions, the central bank should behave in as systematic and as understandable a way as possible, given the macroeconomic and financial environment. That is, although monetary policy cannot be made by a mechanical rule, policy can and should have 'rule like' features. Obviously, the more systematic and the more consistent with a few basic principles the conduct of monetary policy becomes, the easier it will be for the public to understand and predict the Fed's behavior. However, because the world is complex and ever changing, policy actions alone, without explanation, will never be enough to provide the public with the information it needs to predict policy actions. Words are also necessary.

The theoretical debates based on rigid premises which are not linked to the contemporary world have never reached the realm of central bank

practice, which focuses on the effectiveness of monetary policy in practice. Central banking as a practice needs to be based on the language and communication of the practice. A central bank must be able to act flexibly, but this does not imply acting without committing itself. Self-commitment is linked to transparency, independence, and accountability. Transparency implies understanding of what a central bank is, in fact, doing (Issing 1999; Blinder 1998). Blinder stated that 'communication is not precommitment' (2008, 918). Therefore, 'matching deeds to words' does not imply that communications constrain future decisions or actions of the central bank.

The Federal Reserve Bank's road out of 'monetary mystique' is described by Blinder and Goodhart et al. (2001, 67):

> Prior to 1994, the Federal Reserve did not announce its target for the Federal Reserve funds rate – the principal decision made at each FOMC meeting – even after the decision was made. Instead, it would normally enter the money market unannounced, leaving it to professional Federal Reserve watchers to figure out whether it was deliberately changing the funds rate or simply carrying out a technical ('defensive') open-market operation. Only the largely symbolic changes in the discount rate were publicly announced, and they were consequently treated as momentous events – 'ringing the gong', they were called.

Announcing the target for the Federal Reserve funds rate in 1994 was one important step taken among others (Kohn and Sack 2003). On the matter of the importance of its disclosure policy and communicative interaction, the Federal Reserve has been pursuing a new strategy of communicative interaction since 2000, after it founded the 'working group on the directive and disclosure policy'. These changes can be categorized as 'risk management rather than optimizing' in order to solve economic problems, instead of an establishment of rules. In order to improve its transparency the FOMC explicitly distanced its strategy from a rigidly fixed rules approach in favour of discretion and fine tuning. Since inflation expectation is not a 'jump variable' but rather a 'slow-moving-variable', the FOMC tried to achieve a neutral interest rate 'to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates' (Blinder and Reis 2005, 21). During the Greenspan era, the FOMC made a transition to a comprehensive new approach on monetary policy, described as 'Greenspan-gradualism'. This entails 'interest rate smoothing', the 'reversal aversion'

combined with the strategy of publishing the 'risk bias'. It has also transformed forward-looking information policy.

This radical shift in the policy announcement of the Federal Reserve funds rate can be set against the historical background of both the Volcker era and the observation of the new type of inflation the United States was confronted with starting in the early 1990s. The transcript of the Federal Reserve Open Market Meeting on May 18, 1993, for instance, provides evidence of discussions as to whether the Federal Reserve was dealing with stagflation or whether rising prices were driven by inflationary psychological processes caused through changes in prevailing psychology. Greenspan commented:

> That's because in all of our analyses of inflation we endeavor to find the transmission mechanism by which the actions of workers in the wage bargaining process and of managers in price mark ups take place. The conventional wisdom in our models is that (the transmission) is largely induced through changes in psychology (1993, 9–10).

The argument of the assumed embodied inflation expectations entered the game because price movements normally have their basis in real world changes. The new phenomenon confronted the FOMC with the question of whether the underlying inflationary expectations can have real effects. Greenspan emphasized that if at first we recognize a change of fundamentals and, hence – as the so-called causality – we then observe a change in psychology, it is not convincing to argue that it means a change in people's attitudes has occurred (1993b, 39).

The path to greater transparency was motivated by the need to understand these new observations in different ways than had been the case in the past. In order to understand the changing economy in the early 1990s, the Federal Reserve was compelled to reflect upon and to rethink its traditional methods and instruments carefully. The Federal Reserve moved beyond the 'rules-versus-discretion' viewpoint because it lacked an understanding of the new phenomena. The Federal Reserve has not become attached to the dichotomy of the rule-versus-discretionary-model, but to different types of discrete models. It also evaluated and exploited past patterns and observations in order to discover historical regularities – and still does so. One crucial new perception and experience of this time was that new technologies led to unexpected changes and new phenomena in the price movements than had previously been the case. There was no possibility of relying on a single model or rule

in order to analyze the changing environment. The success of a central bank depends on a certain pattern of acting and ways of doing in response to changing contexts. Inasmuch as the Federal Reserve has started to think about its different kinds of communicative interactions with the markets, it has been developing a distinct view on *why, when,* and *what* a central bank could be communicating to markets. Moreover, the Federal Reserve made a radical change to its way of guiding market expectations by its 'bias policy' (Blinder and Goodhart et al. 2001). Three main aspects should be mentioned here:

1) The FOMC published its 'balance of risks' in order to describe its own view on the current macroeconomic performance and also the near future according to the Federal Reserve data and information.
2) It began reporting to the public after every meeting, regardless of whether a change of the interest rate was made or not.
3) The statement of the FOMC became more comprehensive in composition.

These major steps towards greater transparency were supplemented by a further significant change in 2002, when the Federal Reserve started to make announcements immediately after each meeting, including naming names. A crucial fifth step was implemented in 2005 by the release of the minutes after a three-week delay and before, not after, the next meeting was to occur. Before 2005, the minutes of the FOMC meeting were available following a six or seven-week delay, in other words after the next meeting. The minutes provide basic insights of the Federal Reserve's view of the current state of the economy, its prospective view, and also insights into the votes.

To sum up, there are many factors in the communication efforts of the Federal Reserve that have improved the possibility of anchoring expectations. Because of the radical changes in the Federal Reserve Bank's policy of transparency, and because of greater openness and disclosure (Bernanke and Kuttner 2003), market participants are now able to predict what the FOMC will do at its next meeting. Empirical studies have shown that particularly the short-run predictability of monetary policy has been improved (Lange, Sack, and Whitesell 2003; Poole, Rasche, and Thornton 2002; Thornton 2004). Since the Federal Reserve Bank is aiming at the long-run perspective of price stability, the crucial question is whether the communication of the Fed also contributes to predictions of what the FOMC will do in the long run. The disclosure policy of the Federal Reserve is a response to the uncertain landscape

which surrounds central bank policy. It is also a response to the perceived need to improve its communicative interactions. The Federal Reserve was trying to balance a need for a greater degree of transparency with effective monetary policy. The disclosure policy is pictured by Greenspan (2002, 5):

> Accordingly, as you know, we moved to the immediate disclosure of our policy actions and, over time, to explaining our decision and our sense of future risks directly after each meeting. In addition, we now publish full transcripts of our meetings after five years. Through these disclosures, together with congressional testimony, speeches by Board Governors and Reserve Bank Presidents, and the publication of the System's sizable research output, we endeavor to keep the public well informed.

It is not merely disclosure policy that has altered during these changing times. Since its power to influence in the long run concerns only the nominal magnitudes, the Federal Reserve Bank also changed its reasoning with regard to the process of building expectations. The communicative interaction therefore includes the central bank's questioning as to *how* the agents in the market *perceive* the price movements and *where* this perception comes from: is it rooted in data compatible with the Federal Reserve's data? Or is the perception rooted in a different interpretation of the material disclosed to the public? The Federal Reserve Bank not only discloses information to the public, but in trying to perceive how the public might receive and understand this information, it positions itself reflexively in juxtaposition to this information. This reflexive approach to its own disclosure policy is an important part of the modern view of central banking. As an institution the central bank is part of the structures and institutional facts it has itself created by its communicative interactions with the markets.

At this point the guiding of market expectations implies not only information disclosure by the central bank (such as the track report of the FOMC, bulletins, monthly reports, speeches, statements, minutes, and so forth), but also an attempt to understand how the markets perceive the information, that is, how the meaning and understanding of this disclosed information arise. It is assumed that the market participants, especially the analysts, try to reach a comprehensive overview of the central bank's policy by collecting the information (Demertzis and Hallet 2002; Demiralp and Jarda 2004). If central banking is described as guiding market expectations, then it is based

on communications, and, hence, on language activities. The modern view of central banks should also expound upon and emphasize the role language and communication play in economic interactions as interactive practice. Central banking as the guide of expectations cannot be separated from central banking as an interactive procedure or communicative interaction. Last but not least, the modern paradigm of central banking has already rejected the surprise-inflation bias, as introduced by Kydland and Prescott (1977) and Barro and Gordon (1983):

> In case of the modern incarnation of the rules versus discretion debate, based on time inconsistency, I have argued that things are starkly different. In my view, the academic literature has focused on either the wrong problem or a non-problem and has proposed a variety of solutions (excluding Rogoff's conservative central bankers) that make little sense in the real world. (Blinder 1998, 50)

Regarding the Barro-Gordon world, Cukierman (2002, 16) added that '*that* credibility problem of monetary policy is a thing of the past'. He argued:

> [T]he quadratic objective function originally postulated by KPBG carries the rather unintuitive implication that, given inflation, an upward deviation of employment from its desired level is as costly as a downward deviation of the same size. It is hard to see, why policymakers, or social planners for that matter, would object, given inflation, to a positive output gap. As a matter of fact it's quite likely that, in the range of positive output gaps, the quadratic was postulated mainly for analytical convenience rather than for its descriptive realism.

Cukierman demanded that central banks should be transparent with their economic model in order to explain the monetary transmission process. Modern central banks are often opaque regarding the implications of their models, premises, and conclusions. This opacity contradicts the current consensus of being open about the objectives and the desirable organization of central banking institutions. Whereas price stability seems to be an accepted goal across different views and theoretical approaches of central banking, the way of explaining the model implication and structures used for operational objectives of the monetary policy are not.

From the viewpoint of the Bank of England, Vickers (1998) outlined the approach as follows:

> It should go without saying that the MPC's objectives are given by the Act and by the remit set by the Chancellor. There is a large literature on inflation bias, but it is simply not applicable to the MPC. We have no desire to spring inflation surprises to try to bump output above its natural rate (wherever that may be). Quite apart from the obligation to fulfill our statutory duty, we have the strongest professional and reputation incentives, which in my opinion are incapable of being enhanced by financial incentives, to get as close as we can to the inflation target.

There seems to be no dispute about the inaccuracy of rigidly fixed rules or of simply relying on deductive arguing of the model view among central bankers. The connection between monetary policy strategy, its need to guide market expectations and the market responses came to the attention of central banks later – after the rational expectations hypothesis had lost its conviction. The reliance on the rational expectations hypothesis was a replacement of the illusion that the economy could be seen as a stable point of gravitation. Neither the Barro-Gordon model nor the concept of time inconsistency (Kydland/Prescott) could explain the phenomenon of stagflation because no central bank had supposed the public would act on the basis of the rational expectations hypothesis. A second twist in this hypothesis and the so-called 'Lucas-Critique' started with an emphasis on central banking practice (Muchlinski 1999a). As we have just seen, the reliance on a fixed rule of a monetary policy regime did not provide a way out of the problems central banks were confronted with. In an early paper, Blinder (1987, 135) went on to qualify his objections:

> The important thing is to make sure our models are congruent with the facts. Lucasians, it seems to me, reverse the sequence. They want to begin with fully articulated, tractable models and worry later about realism and descriptive accuracy. ... [T]he issue is how religiously we must adhere to frictionless neo-classical optimising principles until that glorious day arrives.

Secondly, the argument that a transparent central bank becomes 'hostage to market sentiments' (Jensen 2001) – because a fully anticipated monetary policy by the market participants is ineffective – has been rejected by the modern paradigm.

Thirdly, the asymmetric information argument regarding a central bank and the public has been revised, since communication has been accepted as important to transparency. However, the asymmetric information argument is not a striking one, because understanding and meaning are not based on information delivery (Muchlinski 2005). Bernanke (2004a), among others, appreciates communication as a mode to 'make information symmetric', a method to improve the private sector's ability to create adequate expectations. Since the Federal Reserve Bank has been moving little by little towards a new 'forecast based policy', the private sector is compelled to base its own forecast on a greater variety of economic parameters. Respectively, the private sector has to perceive a wider branch of the statements of the FOMC, different publications like the Blue Book and Green Book, the speeches of the chairman and vice chairman, and the press releases, in order to grasp the message of the Federal Reserve Board and to integrate that message into the private decision-making process.[8]

A particular consequence of the 'forecast based policy' is admittedly that the private sector has been bearing greater risks than before. The 'forecast based policy' also implies the possibility of minimizing financial risks as long as the public engages in communicative interactions with the Federal Reserve. Compared to 'forecast based policy', the traditional 'simple feed back policy' was endowed by only a few observable economic parameters – such as unemployment rate, inflation, wage structure, business orders, exchange rate, and so forth – and economic adjustments were judged to be easier regarding the informational constraints. According to the 'simple feed back policy', the development of the private sector's expectations seemed to be simple. However, simplicity is not always the best way to reach a goal, because it entails also the risks of travelling down wrong paths or being misguided. The current 'forecast based policy' acknowledges the uncertain landscape of a central bank's decision-making process:

> The view that less information could help to deal with the information asymmetry – the public does not know as much about the central bank preferences and intentions as the central bank itself – is surely paradoxical. (Blinder and Goodhart et al. 2001, 15)

An important reason for 'secrecy' is the admitted fact of the *asymmetry of time* horizons regarding different agents, motives, expectations in different markets and the central bank. The goal of price stability is a long-lasting objective which a central bank can try to achieve only by

operating in short-term horizons, which may conflict with the interests of market participants. Asymmetry of time horizons is a key feature of modern central banking. It is rooted in the divergence of monetary policy decisions, for example, setting the short-term nominal interest rate while influencing a long-term interest rate, which is compatible with the central bank's mandate of price stability evolving through the long-term transmission process.

The crucial element here is the difference between the market and the public regarding the time horizons. The phenomenon of time asymmetry implies that every decision and action of the central bank has to be discussed within this time asymmetry. The reason is that markets act within a short-term horizon, more or less a few months hence, whereas the Fed's attention is drawn to price stability after several quarters. Real rates (e.g. real wages, real interest rates) are results of market processes over time. Blinder expounded (1998, 60):

> It takes an amazingly strong constitution to wait that long. In stark contrast, the market provides a kind of giant biofeedback machine that monitors and publicly evaluates the central bank's performance in real time. So central bankers naturally turn to the market for instant evaluation.

Given time-horizon asymmetry, any central bank is compelled to respond to it in order to achieve its goal and mandate. A central bank cannot achieve its goal by surprise actions but only through the success of an initiative to guide the expectations in the money market to a coherent result. In light of the asymmetry of time, central bank decision making requires, in practice, the judgment of observations and the evaluation of different empirical sources in context, seeking to discern historical regularities as well divergent observations, rather than following a universal model by virtue of deductive reasoning.

1.3 Monetary policy as a language analogy

> A monetary strategy is like a language. Like a language it provides tools and a frame for reasoning, and a vehicle for communication. Winkler (2000, 23)

Economists are trained in microeconomics, macroeconomics, and metrics (Athey, Katz et al. 2007). They do not, presumably, study economics in order to consider questions such as 'why and how does the use of

language create social facts or institutions?' or 'does language require language?' I will return to such questions in Chapters 5 and 6. The constitutional role of language has already been accepted in the social sciences. Language does not work through artificial rules or signs, but through everyday language as used in practice and context. I want to deal briefly here with the issues of whether language is a self-identifying category of institutional facts – that is, whether or not there is circularity in arguing. I want to add certain aspects still missing in the current debate on central bank communications. If monetary policy works *through markets* (Blinder), that is, in guiding expectation-building, then interactive relations need to be set out precisely. This chapter provides additional reasons why monetary policy should be conceptualized as a 'language analogy', a term used by Winkler (2000) which has been increasingly accepted in the academic community.

In my view, focusing on the use of language and the communicative interactions of a central bank implies the following:

a) The world which surrounds a central bank is neither a fixed nor invariable world.
b) Uncertainty is the defining characteristic of that world.
c) A central bank acts within a democratic and institutional environment, not in social isolation.
d) The central bank's actions are due neither to an ordering of logical possibilities nor a mastery of probabilistic calculus independent of the central bank's practice and environment.
e) There are no such things as simple methods, linear mechanisms, or fixed rules by which to achieve a central bank's mandate when it must operate within changing environments and contexts.
f) The central bank's language is embedded in institutional practices, for it is this which gives meaning to its utterances.
g) An utterance or proposition can be vague. It can have a meaning which differs according to differing uses of language in differing contexts. Therefore. for the central bank to be accused of being vague in its utterances, statements, or announcements is attributable to the use of everyday language.

Two key propositions are relevant here: First, language is not identical with communication regarding its functions. Second, language provides a system of mutual orientation for both speaker and listener, a system that enables them to configure a context for communicative interaction. Furthermore, language functions themselves are based on

practice and custom. The function of a language is rooted in its elementary reference. It goes beyond being viewed as merely a medium of transforming information (Trabant 2008). For example, to use a language without a reference to its previous use will not allow the meaning of a word, phrase, or sentence to evolve. These have no private meaning: their meaning emerges through their use in practice. Language activity implies the use and application of sentences and expressions. We do not learn, or grasp, the meanings of words or sentences in isolation.

Using language structures thought and reality, because the use of language matters as an interactive procedure. This use creates institutional facts. Moreover, a word does not just refer to a mental state of an individual, nor to his or her intention, 'for then it means: *that* is how we use it' (Wittgenstein 1978 § 247). The mental state does not accompany the meaning of a word or a sentence. As Wittgenstein (1978 § 329) expounded: 'When I think in language, there aren't "meanings" going through my mind in addition to the verbal expressions: the language is itself the vehicle of thought'.

The prevailing view in the literature on central banking refers to the presumed mechanical symbols or signs as the means to 'exchange the already given meaning', or to 'exchange information'. Most branches of economic sciences are inclined to focus on language as a medium of exchange in relation to a given meaning, or the settling of information in order to optimize economic results. They ignore, or perhaps despise, the fact that language is elementary for the acquisition of knowledge and scientific work because language is not neutral as to thoughts (Trabant and Ward 2001). Language is elementary for common actions because it is a precondition of human interaction, dialog, discourse, and discussion (Tomasello 2002). Modern language sciences and cognitive sciences emphasize the constitutive role language plays in creating institutional facts, norms, rules, meaning, and understanding, as well as shared social values (Trabant 2009). Communicative interactions and language activities are not patterns, like mechanical reflexes according to the stimulus-response mechanism model. Communicative interaction is not simply the result of a transmission of information. The traditional view on central banks contrasts sharply with modern research in language and cognitive science (Kober 2002).

Market interactions are driven by language activities rather than by the mechanism of a pendulum or according to natural laws (Maennel 2002). The analogy to natural science is a misleading one. If we take seriously the critique of the 'car analogy' below, it follows that we cannot rely on such inaccurate images. Meaning and understanding are *not*

given ontologically. They are not composed of different properties, like a machine or a car. Bernanke (2004) objected to models employed for the sake of simplicity rather than for the sake of understanding. The 'car analogy' makes no sense:

> The FOMC decision process may appear straightforward. A commonly used analogy takes the U.S. economy to be an automobile, the FOMC to be the driver, and monetary policy actions to be taps on the accelerator or brake. According to this analogy, when the economy is running too slowly…, the FOMC increases pressure on the accelerator by lowering its target for the Federal Reserve funds rate, stimulation aggregate spending and economic activity…. What could be simpler than that?

The modern view of central banks is built on the view that communication matters because the central bank influences expectations by forward-looking decision-making (Blinder et al. 2008). Changes in the overnight rate affects the actions of the agents, that is, spending decisions and, hence, the pricing and of course employment decisions. A central bank influences expectation-building and, hence, decision making. Therefore, the central bank needs to explain its own view on the current and future performance of the macroeconomic reality.

Communication does not occur for its own sake, because it is connected to transparency and the independence of the central bank in democratic societies. Woodford (2005, 4) pictured the central bank as a 'manager of expectations', endowed with the power to set 'the future path of overnight interest rates, and not merely their current level'. He was opposed to the mechanical analogy because 'central banking is not like steering an oil tanker or even guiding a spacecraft' (ibid). According to the new paradigm of central banking, it is time to acknowledge the constitutive role of language activities in central bank theory. The guiding of expectations in the market cannot be separated from the use of language and communication.

As stated in previous paragraphs, the meaning of thoughts does not refer to a mental state or intention. If we acknowledge the modern view of central banking, the question 'does the central bank really intend, or believe, what is said?' is hardly relevant. Blinder gives an example regarding demands to publish the macroeconomic forecast by the Federal Reserve: 'One objection that central bankers occasionally raise is that the staff's forecast may not correspond to the beliefs of the actual decision makers' (Blinder 2004, 19). To be sure, if we accept

the modern view of central banks, it follows from this that such an objection would be meaningless because we do not assume a divergence between the statements of the central bank and its intention or beliefs. Whereas the considerations and contributions of classical economists often emphasized the language aspect, and also investigated the role of language in use, current economic work is predominantly couched in formal language. However, certain critiques on the predominant formal language approach to economic questions have already reached the agendas of economic meetings (Akerlof 2007). The new institutional economics emphasize the interdependencies of communicative interactions (Erreygers and Jacobs 2005; Maennel 2002). By language, I do not mean coded language.

The link between monetary policy and communication is important for transparency, that is, for both the effectiveness and accountability of a central bank. Communicative interactions should not to be confused with rhetoric (McCloskey 1983; Backhouse 1993; Henderson 1993). A central bank communicates in order to implement its mandate. Not only the disclosure of information and explanations but, furthermore, 'words are also necessary' (Bernanke 2004a, 6). A central bank's communications encompass information policy, but are not tantamount to that policy. 'Inevitably communication involves a large amount of detailed information on the central bank procedures, data, decision-making process' (Blinder and Goodhart et al. 2001, 10).

Any communication starts with the use of language, written or spoken (Trabant 2009). This links a central bank's communication to practice and environment. Any decision-making process and communicative interaction must be anchored in a reference. This reference should be linked to the contemporary world, not to unrealistic premises nor to logical syntax. The inherent connection between the use of language and the anchor of reference sheds light on the role language plays in communicative interaction. To picture a central bank in a prisoner's situation, in which communication and statements do not take place makes no sense at all (Blinder 1987).

Let us now turn to the important issue of central bank transparency, and communication needing to be linked more closely to the modern view of central banks. Winkler (2000, 15) proposed a differentiated the view of transparency focusing on 'the twin roles of a monetary policy strategy: information efficiency and communication'. He asserted the need to evaluate the implications of transparency, which touch on the communicative relationship between the central bank and the public. The latter refers to media, politicians, and agents in the financial

markets. I would like to mention Winkler's approach to differentiate communication and language. It is evident of the constitutive role of language in economics and theory (Muchlinski 2008). This is also true for central banking and communication.

Contrary to the traditional model of central banks, Winkler emphasized that transparency is first of all a 'social phenomenon' because it is addressed to independent institutions, central banks, which are part of democratic society. He (2000, 14) defined the monetary policy strategy as

> a systematic framework for organizing and structuring information and analysis rather than a specific monetary policy reaction function prescribing direct 'mechanical links' of policy decisions to particular economic variables.

At this point the demand for a central bank to 'aim at information efficiency' came into the game. A central bank needs to

> provide a framework for communication (that is, a vehicle for information transmission) both externally – in explaining monetary policy to the public – and internally (at least in the case of decision-making by a committee, but also in interaction between staff and policy-makers. (ibid)

The fundamental assumptions of this new approach by Winkler to central bank communication are certain considerations: clarity (C), honesty (H), and common understanding (CU) (Winkler 2000, 17).[9] Given also the assumption of 'bounded rationality' (Simon), clarity goes beyond merely the maximizing of available information. Clarity implies the strategy by central banks to structure and simplify information. Regarding heterogeneous agents in the market, a central bank has to differentiate its information, which can no longer be viewed as a homogenous good. The danger of confusion from multiple public messages or greater asymmetry of information has forced the central bank to provide differentiated information.[10] The result is that the traditional assumption of 'common knowledge', which the economist is used to working with, will become meaningless because different agents or groups in the financial market will get different information that they will also perceive and interpret differently. The common knowledge assumption has been created for the sake of simplifying model building in economics. It is based on the consideration that information is available to all agents at all times and that all agents are motivated to use it.

It also stops the infinite chain of reasoning. As Geanokoplos (1992, 54) described it:

> An event is common knowledge among a group of agents if each one knows it, if each one knows that the others know it, if each one knows that each one knows that the others know it, and so on. ... Thus, common knowledge is the limit of a potentially infinite chain of reasoning about knowledge.

Winkler introduced an internal and an external dimension of communication. The process of communication should be differentiated into a vertical and a horizontal dimension. This distinction gives a first impression of the problems any central bank has to deal with: the perception and attention that market participants do, or do not, pay to statements or information released by the central bank. The evolution of meaning and understanding is based first of all upon the perception of the central bank's voice, words, and sentences (Muchlinski 2005).

How, then, is understanding possible? 'Without this sharing of reactions to common stimuli, thought and speech would have no particular content – that is no content at all' (Davidson 1991, 159–60). Understanding depends on how market participants in fact interact – verbally and non-verbally. Davidson (1982, 327) argued that

> [t]o understand the speech of another, I must be able to think of the same things she does; I must share her world. I don't have to agree with her in all matters, but in order to disagree we must entertain the same proposition, with the same subject matter, and the same standard of truth. Communication depends, then, on each communicant having, and correctly thinking that the other has, the concept of a shared world, an interactive world. ... The conclusion of these considerations is that rationality is a social trait. Only communication has it.

Honesty indicates that the meaning of a central bank statement cannot be an external one. Davidson can be read as supporting Winkler's view: 'If all we have to go on is the fact of honest utterance, we cannot infer the belief without knowing the meaning, and have no chance of inferring the meaning without the belief' (Winkler 2000, 31). Winkler defined honesty as 'the degree to which the representation of information employed in external communication corresponds to the actual structuring of information adopted internally. ... Conflicts may, however, arise between internal and external communication needs' (ibid, 20).

Avoiding the traditional premises of common knowledge, Winkler introduced the importance of 'common understanding' regarding a central bank's context and environment. Since monetary policy acts on the basis of rules, these rules can be interpreted as serving a 'coordinating function in organizing public discourse', hence as communicative interaction (ibid, 23). He emphasized: 'transparency rests on the degree of common understanding between the two and is thus a social phenomenon'. To express a central bank's statement in formal language or coded language would impede common understanding. Everyday language is vague and imprecise, which evinces context and environment. Vagueness is characteristic of everyday language. Nevertheless, a central bank's need to focus on special information and to investigate certain economic developments, that is, the monetary transmission process, which differs extremely between countries, or prices of goods, markets, currencies, the rate of economic growth, and so forth – and, furthermore, the central bank's need to create and communicate certain data according to an economic environment – clearly describe its role as a monetary institution. As monetary institutions, central banks do have comparable monetary strategies in order to achieve an effective monetary policy.

At this point, it should be emphasized that language is not a vehicle to transmit ready-made meaning or informational content from a sender to a receiver. The receiver is not an empty box (the reasons are outlined in Chapter 3). Winkler discusses this point through a graphic presentation. He differentiates between white and grey boxes in order to show the meaning of the perceived information by the public cannot be controlled by the sender, the central bank. The distinction between grey and white boxes should indicate that the antique 'conduit metaphor' is not compatible with modern central bank theory and practice (Bernanke and Kuttner 2003, Blinder 1997). Consequently, Winkler takes the view that

> the notion of transparency as common understanding not only refers to information and modes of interpretation shared between central bank and the public. Communication takes place not between two monolithic players but between multiple senders ... and multiple receivers. In such a setting, a central bank's announcements also perform additional internal and external coordination functions. (ibid, 24)

To sum up Winkler's approach: In accordance with the modern view of communication (Tsohatzidis 1994), Winkler indicates a view of

central banks as senders of information, differentiated from the public as the receiver. Central banks provide information or data that has to be perceived and interpreted. Winkler emphasizes the need to change, in the literature of central banking, certain assumptions: the model of communication and the premises of common knowledge. The avoidance of these assumptions opens up another theoretical perspective on the communicative interaction of a central bank with its heterogeneous audience. Moreover, it moves towards the distinct perceptions through language because central banks do not provide the meaning and understanding of the delivered information. In the following chapter, I go on to argue that communication and language activity do not, in fact, matter as methods of transforming information going from the central bank to the public.

2
A Conceptual Framework for Central Bank Communication

> A game, a language, a rule, is an institution.
>
> Wittgenstein 1983, 334

In this chapter I want to move towards a workable definition of communicative interaction between the central bank and financial markets. This chapter deals with a comprehensive view of communication. Communication is not a linear transformation of information, hence not a linear transformation of a given meaning from a sender to a receiver. The release of information by a central bank implies the creation of non-linear communication structures. I want to propose a non-linear conceptual framework for central banking and communicative interactions. Since communication is based on interaction between at least two persons or institutions, this interaction contains different modes of perceiving, and processing of, information and, also, understanding. The conceptual framework introduces communication as a procedure of information processing, interactions among people and institutions in different contexts. It excludes the view that communication is based on coded language or mechanical adaptations as described by the standard model of communication.[1]

The non-linear conceptual framework I want to propose is a composition of three dimensions. It implies a dynamic relationship between the dimension, 2.1, information, 2.2, interaction, and 2.3, context. These dimensions change according to agents, preferences, times, and situations. This conceptual framework focuses on the interdependence between people's – and institutions' – communicative behaviour in relation to acquired knowledge and shared knowledge, or persuasion.

A treatise on central bank communicative actions, meaning, and understanding involves the need to consider the creation of the meaning

and understanding of central banks' actions. In this chapter I examine modern language and cognitive science research, which are important for central banks because they emphasize perception, adaptation, and context of decision making and action.

The academic concern, or everyday observation, that people's actions convey information and affect behaviour had been neglected in economic modelling prior to the paradigm shift towards information economics (Akerlof 1970). The results of modern language and cognitive science should not be neglected in macroeconomics. Regarding the importance of central banking in both domestic and international economies, central banking is about more than setting the short-term interest rate and guiding market expectations. Central banking is an important part of the culture of, emergence of, and maintenance of democratic institutions in society (Amtenbrink 1999; Issing 2008; King 2004). Any language approach to central bank communication, discourse, and writing needs, therefore, to give attention to a central bank's role in democratic society rather than to list a few labels concerning a central bank's goals.

2.1 The information dimension

I turn here to the first dimension of the conceptual framework, which should be introduced as *information transformation*.

Theories of information transmission – also called the classical model of communication – were sketched by the famous 'conduit metaphor' introduced by Lasswell in the 1950s (Lasswell 1948; Reddy 1979). Lasswell pioneered research on public communication in humanities and social sciences which, until that time, had been a domain of technology. The formula given by Lasswell exemplified the view that the process of conveying information can be pictured as a just-played billiard ball. Given this metaphor, information is interpreted as a sent message, and, according to the sender's intention and meaning, reaches the receiver accurately. In this model of an input-output transformation, the receiver is the double of the sender. The receiver is an empty box. Moreover, information is seen here, *not a related object*. Consequently, there is and will be no communicative interaction needed. The sent information entails the speaker's intention and meaning to be grasped, that is, understood as such, by the receiver.[2]

Theories of the transmission of information stating that information processing could be modelled like a billiard ball appear persuasively simple. For the sake of simplification they seem to provide clarity on the

information-sending process. Moreover, the modelling of information transmission treats it like sending a letter in the daily business of a post office. In a broader sense of the meaning, the postal carrier takes the letter from the sender to the receiver. But this simplified model does not provide a picture of what the receiver gets. What the hearer perceives, reads, and understands is neither identical with the piece of paper the sender sent, nor what the postal carrier delivered. Transmitting a message should not be confused with transporting it. Sending information cannot be modelled as the fall of an apple from the apple tree.

I now turn to an additional aspect of the classical model. Lasswell's formula of the 'conduit metaphor' has influenced ongoing research on communication. His view on communication as transmission of information between sender and receiver is based on the premise of the linearity of information. Any information is sent as an absolute entity. This premise also provides the required structure for the development of methods for the measurement of communication. Lasswell's model of an input-output transformation was driven, first and foremost, by a breakdown of the whole process of communication into distinct phases. Further underlying assumptions are the premises of uniqueness and exactness of information, and that any information can be measured. The inherent persuasiveness of this classical approach to communication is that information is not only an absolute given but also an objective entity. The presumption is required to explain communication modelled on an input-output transformation. To structure the model, Lasswell put the following question: 'WHO says WHAT in WHICH channel to WHOM with WHAT effect?' (Lasswell 1948, 37). If we follow his idea of breakdown or deconstruction, it seems practical to differentiate communication into absolute entities, and to read this as the presupposition of measuring a linear transmission. Merten (1993) emphasized that modern theories of communication still adhered to the Lasswell formula for the sake of simplification. While the focus is on the linear relationship between sender and receiver, the information itself is an absolute magnitude that can be quantified.

The Lasswell model is built up as a metaphor of putting a billiard ball into play. What is metaphor? Lasswell answered: 'Metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature' (Lakoff and Johnson 1980, 3). Lasswell, then, moved to 'physical metaphor': 'Briefly, "physical" metaphors involve the projection of entity or substance status upon something that does not have that status inherently' (Lakoff and Johnson

1980a, 461). This metaphor is not helpful in explaining the evolution of the meaning of the information, nor its understanding. Lasswell model neglects the response of the receiver, the situation and the context of the utterance, as well as the relational characteristic of any information.

A second important feature is the assumption of the neutrality of language, which is described in its role as the 'veil of thoughts'. Given this view of the function of language, it seems clear that the effects of communication are to be interpreted as causal – effects that are measurable, absolute, and objective-given entities. It is claimed that there exist no differences among information, language, and communication. A key term of the traditional view is 'the conduit metaphor'. In the classical view, communication is a metaphor of a communication machine (Shannon and Weaver 1963, 1947).

> Most theories of communication are based on the CONDUIT metaphor, in particular, all theories that view a language as a code and communication as sending of a message in that code from a speaker to a hearer. The medium through which the message is sent corresponds to the conduit'. (Johnson and Lakoff 1982, 9)

Any approach to communication which is based on the 'conduit metaphor' makes a claim as to the effectiveness of communication without drawing attention to understanding, and sees an identity with the mere sending of a message.

The classical model of communication in which language is neutral, that is, functioning as a label to name thoughts or objects – and in which information is already given and waiting to be re-allocated – is based on certain assumptions that can be described by a system of metaphors. This system is rooted in metaphors like rules, methods, and instruments of natural sciences. Communication is explained by moving and removing messages, which are taken as objects, things, and facts from the real world. Words and sentences do have meaning *in*dependent of contexts, situations, and the knowledge of the people who use them. In the classical model, communication is a medium for transmitting signals or signs within such systems as channels or receptacles. The transformation procedure is modelled as a container in which words are chosen to be transmitted to the receiver. The impact and consequences of the use of language or language activities are modelled like tennis balls. According to engineering communication, the view of the 'conduit metaphor' implies the exchange of given information between participants in order to balance the information pragmatically.

Any kind of information transmission between people and machines, or mutual transmission between people and people, is to be interpreted as communication.

New refinements on this semantic approach to language are provided by Lakoff and Johnson (1980), Johnson-Laird (1987), and Steube (1995). In their later work, Lakoff and Johnson (1980) explained language as an element of conceptual cognitive capability. Meaning is linked with concepts which are themselves elements of complex cognitive spheres. These spheres organize the knowledge of the world. Meaning is a result of interpretation. In Johnson-Laird's view, meaning refers to the procedural semantic. Semantic procedures provide the context of mental models for the rule-based interpretation of utterances. The meaning of the word or sentences does not represent psychological states. Steube focused on the interaction of text and structure and on the framework of an action. She inquired as to which strategy of textual work the speaker and the hearer apply to communicative interaction. The success of communication will also depend on the continuity of the analysis of the situation by both speaker and hearer.

Current research on language sciences and communication theories show that these works have already avoided the 'conduit metaphor' by introducing the notion of information as a property related to objects and people, respectively. The idea of successful communication without people interacting with one another or the assumption of the possibility of neglecting interactive processes has been abandoned. As Chaffee and Berger (1987) have explained:

> Communication science seeks to understand the production, processing, and efforts of symbol and signal systems by developing testable theories, containing lawful generalization, that explain phenomena associated with production, processing, and effects.

Another important feature of modern research, such as cognitive science and communication science, is that they are conceptualized as interdisciplinary approaches. In addition, the variety of distinct theories on communication is embedded in the heterogeneous fields of communication research. The International Communication Association provides different criteria in an attempt to systematize current communication research. Consequently it categorizes various sectors of communication, for example, political communication, mass communication, health communication, public relations communications, and so forth. Alternatively, communication can be categorized according to

various interest groups or subject categories; for example, communications law and policy, visual communication, gender communication, and so forth. Furthermore, it differentiates between sections and interest groups, and between separate levels of communication.

As Berger, Roloff, et al. (2010) outlined, it makes sense to distinguish, on the one hand, between a pure *intra* level of two individuals, and on the other hand the *inter*-individual level concerning communicatory relationships among people, or among people and the organizational level focusing on people's interactive communication in an organization, or finally drawing a societal level combined of, and proceeded by, the communicative interactions and properties of people in and within institutions of society. The latter can be described as a systemic approach which underlies the communicative interactions among people and institutions as an interrelated interdependency.

The supposition I would like to make for the purpose of the present analysis is: any kind of published paper (FOMC statements, protocols, minutes, monthly bulletin) implies an offer to communicate. Inasmuch as both written and spoken sentences are to be seen as a kind of offer of communication, both are to be described as a language activity. A written and published paper from the Federal Reserve, for instance a FOMC statement, presents itself as a product of text composed of language. The difference between a written and spoken communication is that the latter is a flux of words or sentences, whereas the former is created or fixed in a certain occurrence (event). The date of its creation refers to a certain point in the past which nevertheless will have effects on the present and into the future. The effects of any written text will usually remain perceivable beyond the concrete situation in which it was composed and completed. Any written text carries its own unique identity, in the form of an expression or utterance. Understanding does not succeed by adapting to the author's intention: rather, it reflects an agreement on a practice. According to the systematic approach to communicative interaction, communication is not to be seen as an act of transmitting the speaker's or text producer's intention to the listener or reader.

Let us briefly set out the key elements of a communicative situation between the central bank and the financial market. We suppose that any communicative situation consists of a reader or recipient, a writer (text producer) or author of a text, and the knowledge or information embodied in the utterance or document. The reader of a written text will be at best supported by the gestures, mimes, symbols, intonation, and prosodic emphasis by the text producer. The coincidence of time in

the current situation – presenting the text by its author, and the audience that is listening – will supposedly lead to a better understanding. The reader of a text is able to check his understanding right away, while the author of the text moves on with his presentation. The written text supplemented by gesture, mimes, symbol, intonation, and prosodic emphasis and the immediate reaction to it by the reader will enhance understanding. Depending upon the reader's acquired knowledge – that is, his epistemic background and his experience – the recipient of a text will be able to identify the producer of a text either explicitly, or by referring to certain characteristics found in the text. This provides the possibility of assessing the written text, inferring meanings, and improving understanding on the part of the reader.

A presupposition for understanding a written text is the context of the production of this text. First of all, there is the context of the use of language, that is, the linguistic practice – a language-game as I will introduce in Chapter 5 – which is relevant for both the spoken and written communicative situation. In a spoken communicative interaction, a person is able to add the perceived elements of knowledge, the mode of the presentation, and the habitude of the author, as well as the particular history of the production of the text. All this will facilitate the discovery of any special social or terminological orientation in the text. For instance, in the case of a written paper by the FOMC of the Federal Reserve it is important to recognize who presented it and when (Thornton 2004); by the European Central Bank (ECB), as Ehrmann and Fratzscher (2005a; 2006; 2007a), Jansen and de Haan (2006), Rosa and Verga (2007) – among other authors – in their empirical investigations document. The time of presentation *and* the time of the production of the paper shed light on its meaning and importance. Understanding depends on a coherent view of the whole. The surroundings of a written or spoken text also entail the epistemic presupposition of an understanding.

Regarding theories of understanding, we need to differentiate between the concept of 'contextualism' as opposed to 'foundationalism'. Contextualism refers to cultural norms, to theories of discourse ethics and certain types of justification (Haack 1993). The distinction between both views – 'contextualism' and 'foundationalism' – concerns the means of justificative truth and correctness of a written text, for instance by referring to a particular class of beliefs which should be interpreted as determined by naturally given or intrinsic epistemic entities ('foundationalism') or by relying on beliefs built up from the context. The latter implies the context will serve as a producer of sense.

Regarding the constitution of the meaning, it is also important to focus on the surroundings of a text. This implies the mode of communication, that is, spoken language, whereas the specification of the topic of the text and its context is composed by the constitutive elements of the text production as such. To understand a text does not mean to register the words and what is written in black letters on the paper rather than to grasp and understand the potential, the non-identical, perception of the sentence. This sheds light on the importance of the recipient and his or her understanding, or, as Issing (1999) outlined, on the perception. Without a doubt, the understanding of a sentence has much more in common with perceiving what is going on in reality, or with context.

The historical line of traditional theories of understanding relies first on suggested correlations between objects and names, or of object, mind, and name as a kind of representation. Furthermore, it refers to the idea of a translation of objects into names and labels, or to the idea of transformation or metamorphosis of so-called input-output relations. Those concepts of understanding are devoted to the failures of classical models of communication and their presupposition: the neutrality of language. A second historical line of those theories of understanding focuses on the subject only, on the individual mind and mental state of a subject. To understand was now conceived of as a form of mind-constitution which excluded the outside world. Whereas the first historical line outlined the idea of representation or translation, the second historical line worked on the idea of a private constitution of the understanding as a procedure of a subject's mind. The evolution in these lines of analysis marked, therefore, a paradigm shift from supposed objectivism to supposed subjectivism. Both, however, have to be seen as a naïve form of simplification of understanding.

In contrast to a written paper or text, any spoken utterance from a text producer or author will only occur at a particular moment of time, due to the flux of spoken words and sentences. Communication is the use of language in practice. The use of language is inevitably connected with a way of acting. An act of communication does not create a simple causality between the communication and the subsequent results. The use of language set in motion a change of the knowledge. Communication is not to be confused with information because the communicative act leads to a change of the amount of knowledge. The attempt to explain communication by referring to a monocausality of information given by the sender to the receiver is not satisfying in the light of the underlying presumption of this model of communication. Any postulated

causality in social sciences is based on changes of content, but not on a change of a causal connection. The meaning of a written and produced paper or the meaning of an utterance (expression) is not driven by such causality.

The communicative way of proceeding is a composition of different modes of action. Nevertheless, as explained below (and referred to already above), meaning is not to be discovered by decomposition of the sentence into words but rather by the way of articulation or via expression (*Äußerungshandlung*). A central bank's role of guiding market expectations is inherently connected to communicative interactions. Considering its public mandate, a central bank is a key player. From that point of view, a communicative strategy of the central bank is not identical with a strategy of selling products. The central bank does not sell a 'product' because the creation of money in its functions as a medium of deferred payment, unit of account, and store of value depends on its acceptability by the public. Money functions as money because the role of the central bank has been accepted by society. There is no bilateral relationship which creates money in its functions. Money acquires its acceptability through a trilateral relationship in which debtors and creditors build up the first order of this relationship and a third party, the central bank or monetary authority, functions as the legitimate instance. Money cannot be defined by lawgiving or by a law, since a central bank must gain in credibility and reputation as a third party by fulfilling its mandate of price stability, hence through its reputation and credibility.

The following quotations briefly exemplify the crucial aspect that money is not defined by an object, truth, silver, or gold, but rather by confidence in its prospective functions as a medium of deferred payment, unit of account, and store of value, hence in its function as a public good. Here, the analogy with language makes sense considering that language in its function cannot be interpreted as a private language, 'language is necessarily a social affair' (Davidson 1992, 262). Language finds its role out of a trilateral relationship or a 'share world' (Davidson 1991, 156):

> I believe Wittgenstein put us on the track of the only possible answer to this question. The source of the concept of objective truth is interpersonal communication. Thought depends on communication. This follows at once if we suppose that language is essential to thought, and we agree with Wittgenstein that there cannot be a private language. The central argument against private language is that unless

> a language is shared there is no way to distinguish between using the language correctly and using it incorrectly: only communication with another can supply an objective check ... a standard of objectivity in other domains. (ibid, 157)
>
> The publicness of money resides essentially in its general acceptability, which make the value of money balances held by each individual depend not only on his own possession and market prices, but on the holding of other persons. (George Grantham et al. 1977, 345; in Spahn 2009, 6)
>
> Because money is a claim on the economy as a whole rather than on a single individual, there is not need to acquire information about the individual who offers it in exchange. ... It is information costs that lie at the bottom of any difference between money and other assets. ... The institution of money can act as a substitute for trust. (Douglas Gale 1982, 187f, 239; in Spahn, ibid, 4)

A central bank shapes market relations in order to establish a medium which will possess all necessary features of the credibility of money. There are no symmetric relations between a central bank and the agents in the markets. A central bank's goal is to participate in, and to contribute to, establishing the sense of market activities. The concept of the market is rooted in space and time. A central bank will coordinate its own expectations about the future path with the agents' expectations based on their future view and goals.

The current literature emphasizes the relevance of central bank communication. It has been examined by different methods involving the measurement of the words, different types of communication, and different types of information the central bank gives the public. Regardless of specific technical aspects and problems of these measurements, which authors debate in their research, the conclusions of current empirical studies seem to have achieved a consensus: communication helps fulfil a central bank's mandate. Another consensus is also conceivable: that is concerning the efforts to reflect and investigate communicative interactions between the central bank and agents in the financial markets more intensively.

In this section I would like to introduce arguments for differentiation among language, communication or communicative interactions, and information. According to the modern view of language, the commonly characterized feature of language, communication, and information is that these concepts do not refer to objects or things (Tugendhat 1976, 161f.). Things or objects, like cars, stones, and books have their

own bounds or districts, which can be easily identified, recomposed, weighed, and measured. But this is not true for language, communication, and information. Neither language nor communication nor information are to be identified as objects. Information and communication are often seen as a given fact rather than as something which requires implementation among people in order to be judged or assessed. Furthermore, language, or information, is not identical with communication. Language does not exist as a list in a catalogue. This is also true beyond the obvious fact of the existence of dictionaries.

As discussed at the beginning of this book, central bank communication should enhance the effectiveness of monetary policy. A central bank's communication regularly encompasses inflation reports, talks, minutes, statements, speeches, and monthly bulletins by a central bank. It implies written and verbal language. The communication of a central bank is also interpreted as the disclosure of given information by the central bank to the public. In empirical studies, the release of information is often discussed as 'dismantlement' (Buiter 1999; Ehrmann and Fratzscher 2003). What does the measurement of the communication of a central bank estimate? Does it measure the transmission of given information? According to literature, it is supposed to measure whether and how the sending or providing of information has initiated any, or a particular, effect in the activities of the market or in agents of the market. The measurement tries to establish and document an increase or decrease of market transactions or changes to interest rates.

From the viewpoint of the classical model of communication, the primary goal of communication is the effectiveness of the exchange of information between the sender and the receiver. The measurement of the effectiveness is desirable and feasible. The striking feature of the classical models of communication is the heritage of Aristotle's view on rhetoric, which has also been interpreted as a model of communication. Aristotle constructed two models of thinking. One model entails absolute but not relative or relational entities. The second model describes the procedure of communication as rooted in the intention of the speaker and the assumption of the causality of the effects of rhetoric or communication, respectively. The classical model of communication is based on both principles as sketched in these two models. The most famous successor of this model of causality, which is oriented towards absolute entities, hence to positions and not to relations, is the early theory of Lasswell.

In the literature we find a distinction between two approaches to communication, information and language, both of which are based on

the 'conduit metaphor' (Fiehler 1990, 104f). The first approach is found as metaphors in daily life. This also casts light upon the multiplicity of aspects ascribed to communication:

a) communication as a means of conveyance of goods;
b) communication as a battle of argument, as a defense, as an attempt to campaign against another person;
c) communication as an act of eating (feeding), excreting, and digesting;
d) communication as a procedure for constructing a house or a speech, to underpin an assertion or break it down;
e) communication as a method of weaving, dwelling on thoughts, and getting tangled;
f) communication as an act of painting a picture or delineating the ambience; as an illustration of one's mental state or one's thoughts, which otherwise would remain hidden;
g) communication as a process of growth-like flowers in a garden, as a creeper climbing a wall;
h) communication as flux or movement.

This short list of examples might give an idea on the variety of the uses of communication in different situations in daily life. As we follow this approach to communication, we are able to grasp that communication seems to have many uses in different life situations. Nevertheless, this approach fails to describe communication properly because of the underlying assumption that communication is interpreted as corresponding to objects or entities and their attributes.

The second approach to communication, also based on the 'conduit metaphor', underlines the role of language alleged to be neutral because it gets its relevance as a 'veil of thoughts'. Furthermore, it shows that communication is a central instrument for conveying information between the sender and the receiver. Communication serves as a rational procedure for transmitting information from the sender to the receiver. It also allows the balancing of existing gaps of knowledge between both agents. Supposing a gap of knowledge is an important assumption in order to give relevance to communication. In this, communication is not linked with understanding but rather with the attempt to balance given information.

Both these approaches are based on the 'conduit metaphor'. It is for this reason that communication is interpreted as an exchange of given information, in order to reciprocate information which should balance

the different internal states of both the sender and the receiver. But with this enlarged concept of communication, exchange and reciprocity, the process of communication itself has not become any clearer. The aspect of reciprocity has not removed the classical view of communication because it remains an epiphenomenon. It is misleading to argue that a process of communication is nothing more than an exchange of given information or an exchange of a given meaning. Nor can communication be explained by referring to an assumed symmetrical or reciprocal distribution of information or meaning. Insofar as the investigation of communication is focused on the idea of the measurable effects of the communication rooted in the linear transmission from a sender to a receiver, but neglecting the context in which the communicative action takes place, the incompleteness of models of communication still remains. Communication does not refer to immobile objects. The understanding of communication does not succeed by an appeal to reciprocity but only by investigating the communicative interaction in given contexts.

As I will expound in the following chapter, communication encompasses relations and procedures which are systematically changeable through the communicative interactions. Additionally, it needs to be recognized in the attempt to quantify and to measure communication that communication has no dimension which can be precisely stated, like the dimension of electricity or magnetism. Fiehler (1990: 192f.) pointed to the mathematician Norbert Wiener, who explained in 1948 that communication is understandable only as a systemic relation and not as a linear procedure. Wiener himself referred to the logic and the paradoxes of communication. Bertrand Russell gave striking examples on paradoxes of communication. One famous example is the following: if a Cretan says, 'all Cretans are liars', an example Watzlawick et al. (1967) also discussed as a paradox of communication.

In technical engineering terms, any communication implies interchanges in order to convey data, information, symbols, and signals in the specific situation in which the communication takes place. The goal of this interpersonal communication is similar to the role communication has in the 'conduit metaphor' approach. According to the 'conduit metaphor', both the mundane and scientific concept of language, information, and communication is that of a physical entity for transmitting information, signs, or symbols between different systems. In this engineering view of communication, the term information is used as a synonym for knowledge. Granted the premises that any linear transmission of information will enhance the body of knowledge, balanced by

the sender and receiver symmetrically, nothing could be more desirable than the continuity of the linear communication. Reality, information, and meaning are already given and need only to be equalized between the sender and receiver, like water in a river. The modern approach to linguistic sciences emphasized the *in*significance of the 'conduit metaphor' (see Trabant 2003).

In their later work, Johnson and Lakoff (1982, 9) emphasized the uses of the 'conduit metaphor' in situations in daily life:

> These are situations in which the following conditions hold: (1) These participants are equally competent speakers of the same dialect of the same language, and individual variation is insignificant. (2) Relevant to the subject matter and the context, the participants share a) the same cultural assumption, b) the same relevant knowledge of the world, c) the same relevant background assumptions about the context of the utterance, d) the same understanding of what the conversation is about, and e) the same relevant conceptual metaphors and folk theories.[3]

What should be right for communication seems also to be appropriate to language, too. The classical view did not differentiate among words, sentences, language, communication, and information. Moreover, it draws no attention to processes of understanding. Language is identified as a system of rules or convention, as an instrument of thoughts, as a medium of transmission of experience, information, and knowledge, as an organism, or as the amount of infinite words.

Of course, different conceptual approaches to language, information, and communication provide different understandings. Language, information, and communication are not defined by the exactness or non-vagueness of the concept, nor by its numerical elements or quantities. In contrast to such a view of exact and non-vague terms, language, information, and communication get their meaning out of situation and context as related issues. The view of the vagueness of language and of meaning necessarily avoids the adherence to objective criteria of truth (Graff and Williamson 2002; Raffman 1996). To put it more precisely: language, information, and communication are not absolute objects or entities which are independent of their use.

In contrast to such a classical model of communication, any communicative act is inevitably connected with the exertion of efforts to understand. The misunderstanding arises out of the conception of language, communication, and information as absolute object which could

be quantified, measured, and objectified as things. Articulation, that is, expression and utterances, are not understood because they are measured and quantified. Wittgenstein (1983) emphasized:

> Nothing is commoner than for the meaning of an expression to oscillate, for a phenomenon to be regarded sometimes as a symptom, sometimes as a criterion, of a state of affairs. And mostly in such a case the shift of meaning is not noted. In science it is usual to make phenomena that allow of exact measurement into defining criterion for an expression; and then one is inclined to think that now the proper meaning has be *found*. Innumerable confusions have arisen in this way. There are, for example, degrees of pleasure, but it is stupid to speak of a measurement of pleasure. It is true that in certain cases a measurable phenomenon occupies the place previously occupied by a non-measurable one. Then the word designating this place changes its meaning and its old meaning has become more or less obsolete. We are soothed by the fact that the one concept is more exact, the other the more inexact one, and do not notice that here in each particular case a different relation between the 'exact' and 'inexact' concept is in question: it is the old mistake of not testing particular cases. (Wittgenstein 1967 § 438)

Inasmuch as the effectiveness of the communication of central banks should enhance the effectiveness of monetary policy, it is obvious that investigations and contributions on their communication and language are mainly concentrated on those instruments and methods of measurement which are predominantly applied to economic questions (Kohn and Sack 2003; Ehrmann and Fratzscher 2005a). Nevertheless, it makes sense to enlarge the view on economic interactions which goes beyond such methods. If language, sentences, and words are extracted from their use in practice, they will lose their meaning and will be nothing more than empty concepts. Wittgenstein (1978 *PI* § 96) explained:

> Thought, language, now appears to us as the unique correlate, picture, of the world. These concepts: proposition, language, thought, world, stand in line one behind the other, each equivalent to each. (But what are these words to be used for now? The language-game in which they are to be applied is missing.)

The meaning of a word or sentence arises out of the use of colloquial language, but not by supposed correspondences of the objects

to the world. The use of language is not a result of constructing a superstructure, but a consequence of the development and changes of concepts due to changes in the society and sciences. Language-based knowledge is not composed of atomic entities. Words and sentences are not empty boxes or empty containers which can be filled in with meaning.

The implication of the conditions outlined and premises encapsulated in the classical view is that the function of language is to conduct and transfer thoughts or mental states from one person to another. Writing and speaking should be seen as analogous to inserting a coin into a machine: according to the classical view, when people write or speak they insert their mental state or thoughts into words. Words, therefore, are nothing more than the veil of thoughts. Consequently, words merely accompany thoughts by containing and transferring it from the sender to the receiver. A further strand of this scientific approach to communication stated that communication is a method for constructing and negotiating facts of reality and social life. According to this view, communication is a method of creating reality.

2.2 Constitutive process of information processing

I now turn to *information as information processing*. As a key assumption, *information* is regarded as *a related object*. More precisely: information refers to people or other objects and, more importantly, different structures of communicative actions. The acknowledgement of *information as information processing* implies that information is not given ontologically but rather that we must consider *information as a related object*. This does not mean focusing on a person's intention or mental state but rather paying attention to a person's interactive activity and procedure. Information is not a natural phenomenon like trees or stones.

The concept of *information as information processing* draws attention to certain assumptions about a person's cognitive ability to learn, adapt, understand and, hence, configure their environment (Planalp and Hewes 1982). It refers to persuasions as a particular inherent moment of any communicative interactions and to the environmental structures of the discourse (Sucharowski 1996). Any information is perceived, recognized, and understood by people (Pretty and Cacioppo 1986). Actions convey persuasions. There is, of course, a convincing example of a successful interdisciplinary approach in economics and science. Take, for instance, the new paradigm of information economics, which acknowledges fundamental research in cognitive science to refine

economic modelling of information (Kahneman 2003a, 2003b). In an earlier paper Akerlof (2002) stated:

> Cognitive psychology pictures decision makers as 'intuitive scientists' who summarize information and make choices based on simplified mental frames. Reliance on rules of thumb that omit factors whose consideration have only a small effect on profit or utility is an implication of such cognitive parsimony.

Working out a non-linear conceptual framework of central bank communication requires the introduction of communication as a multidimensional approach. The key assumption inherent in this view states that information processing is a result of people's process for selection, perception, and adaptation. Furthermore, it is based on the process of docking information to an acquired knowledge base. This knowledge base is changeable by the learning process of the individual.

According to modern cognitive science, any information processing is called a cognitive procedure driven by the central nervous system (Cacioppo 2002). Of course, neither economic theories nor theories on central banking or monetary policy are concerned with the functions of the central nervous system – not even the central nervous system of the central banker. This is admittedly beyond the realm of economic research. However, economic theories are applied so as to work with assumptions of information processing, which are often modelled as a linear transformation of information processing or linear modes of causalities. It is hardly convincing, however, to model information processing by an analogy with the mechanism of causality by neglecting the important factor of related people – or groups of economic agents – institutions and norms to which it is related. The car analogy should be substituted by the language analogy.

A person acts for a purpose and on volition. This is also true for institutions as interpreted by modern organizational or institutional theory. Institutions are seen as learning, acting, and changing (Noteboom 1999). To argue that the reason for the activity is arrived at by the operation of a pendulum is an inaccurate premise for economics as a social science. People act from a complex set of hierarchically ordered wishes that appear to each economic agent or institution as rational at the time the actions are taken. Acting without reason is not rational at all. To presume actions to be a mechanism without reference to reasons is not an accurate premise for the communicative approach to the modern paradigm of central banking as discussed in this book.

Moreover, research in cognitive science indicates that modelling a person's perception and understanding as a black-box mechanism is misleading. I refer here to Goldstein and Gigerenzer, who introduced a heuristic approach to social sciences.[4] Heuristic methods are strategies that steer information searching and processing, and cannot be handled by logic and probability theory. In contrast to Kahneman and Tversky (2003) and Gigerenzer (2002), Gigerenzer and Goldstein presume a different concept of rationality is needed in order to work out the information processing and decision-making procedures under uncertainty. Goldstein and Gigerenzer's (2002) interdisciplinary research acknowledges the cognitive capability of people. They call the environment that surrounds economic decisions and behaviour an 'ecological environment' (ibid 2002, 85). The social environment is described as an ecological one because the individual act within certain surroundings is rational in order to achieve a goal.

Goldstein and Gigerenzer in particular introduced 'the recognition heuristic' to explain how an individual exploits the structures of information in the changing environment by using memory and perception. The authors asked the participants in their experiment the following question: 'Which city has a larger population: San Diego or San Antonio?' While 66 percent of Americans answered correctly, 100 percent of Germans answered correctly that San Diego is larger. The surprising result of their experiment was that during the four-week testing phase the accurate answer was given less frequently by participants although they had comparably more information, memory, or the opportunity to talk in the last phase than in the starting phase of the experiment. The recognition information acquired during four weeks of experimentation was used as a substitute for the genuine recognition information. From the experiment Goldstein and Gigerenzer (2002) concluded that more information, knowledge, or data is not always better in solving a problem.

The demand to maximize or optimize the store of knowledge, information, and data is not a true demand in social sciences (Künne 1993). Moreover, it is often not possible. Mathematical optimization often does not provide any empirical validity. Heuristic studies, for instance recognition heuristics, are concerned with questioning how agents make decisions and judgments in a concrete situation. They do not depend on optimization or maximization of the utility function or working out a mathematical proof. The recognition heuristic is ecological because it draws on a relationship to the environment and not to mathematical or logical rules. Gigerenzer (2004, 62) described an interesting example

which enlightens us about the rules of formal models in decision making based on using everyday language:

> A decision theorist from Columbia University was struggling whether to accept an offer from a rival university or to stay. His colleagues took him aside and said: 'Just maximize your expected utility – you always write about doing this'. Exasperated, the decision theorist responded, 'Come on, this is serious'.

Heuristic thinking is crucial for decisions and judgments that are not measurable and computable or if measured and computed would lead to serious problems of interpretation in terms of reality. One has to decide: Is the decision-making process computable or not, and how can the likely outcome of the mechanical procedure be linked to the contemporary world? To put it briefly: the recognition heuristic is not a general method applicable to any kind of question because of the conclusion of the Gigerenzer experiment, that is, 'that a recognized object will be chosen over an unrecognized object'. The Germans chose San Diego because they had more knowledge or information about it than about San Antonio. Application of the recognition heuristic, and of everyday language, is suitable if ignorance or lack of recognition is systematic. This is also true for interaction between the central bank and financial markets. Gigerenzer (2004, 64) gave the following example:

> If you learn to fly an airplane, you will be taught a version of it: When another plane is approaching, and you fear a collision, then look at a scratch in your windshield and observe whether the other plane moves relative to that scratch. If it does not, dive away quickly. For the pilot, the goal is to avoid a collision, whereas for the outfielder, the goal is to produce a collision. The nature of the heuristic is the same.

He resumed:

> Evolved capacities can make a heuristic simple, while the structure of the environment can make it smart. (ibid)

Goldstein and Gigerenzer (2002, 76) outlined the need to acknowledge that decision-making and judgment are based on an acquired knowledge base, so-called 'evolved or learned capacities of an organism'. The acquired knowledge base is embedded in social acting and

practice. Heuristic methods exploit the evolved capacity and the structures of the environment. Heuristic methods are often incompatible with measurements and computer programs, as fundamental research in psychology indicates, for instance, the gaze heuristic. Catching the ball in a game does not require calculating or computing a particular rule about how the fielder should move in order to catch the ball. The goal of optimization does not fit the need in practice. According to the recognition heuristic, the authors concluded that forecasts based on the heuristic model will not lead to optimization since the logic of heuristic methods is variable:

> The gaze heuristic, for instance, predicts that players catch the ball while running, which follows from the fact that the player must move to keep the angle of the gaze constant. Similarly, when the ball is thrown to the side of the player, one can predict that the player will run a slight arc. ... (see Shaffer et al. 2002 in Gigerenzer 2004, 64)

What can be concluded from this recognition and gaze heuristic for central banking? The evaluative procedure on which any decision-making process is based is inevitably rooted in an acquired knowledge base. It is also due to differentiated modes of judgment of the information in different contexts (Gigerenzer 1996). Regarding this research I would like to emphasize that information processing is neither a linear procedure (because of distinct responses and reactions by people in different environments) nor a process beyond communication interactions and the use of language. More importantly, it is the language and communication-*based* information processing that creates such complex results.

Information processing is a cognitive process involving a person's selective perception, different modes of adaptation and understanding based on bounded rationality (Kahneman and Tversky 2002; Gigerenzer and Selten 2001a, 2001b), and it is precisely this cognitive process that is not an invisible or inner, mental process, but rather one of discourse and communicative interactions, which, I should remind the reader, are driven by the use of language because language is not neutral to cognitive or heuristic procedures. Gigerenzer et al. show in their heuristic approach to social phenomena that recognition capacity guides the understanding and meaning of information perception. They also expound that information is perceived through recognition ability, experience, and selective perceptions, which also depend on

the context and cannot be delegated to rules or criteria beyond that game or practice. It is important to open up the debate beyond deductive modelling by integrating cognitive science results considered relevant to central banking as a conceptualized language analogy. This research in cognitive science is important for macroeconomics in order to understand how meaning and understanding evolve. As revealed by the history of information economics, the interdisciplinary approach to macroeconomics has provided theoretical developments. Nevertheless, a great deal of work has to be done if we are to understand new phenomena in financial markets and behavioural finance (Fudenberg 2006; Mullainathan and Shleifer 2005).

Expanded a little, the issue outlined a bit further, that is, information as processing information and, hence, as a related object, includes drawing attention to the limits that constrain a person's attention and information processing. A pioneering work has been introduced by Festinger (1957) who defined it as people's 'cognitive dissonance'. This 'cognitive dissonance' theory is based on the observation that a person's perception is both incomplete and selective regarding the acquired knowledge base, experiences, preferences, interests, plans, and cognitive capacity.

Moreover, people are inclined to avoid divergences of cognition for the sake of a pleasant state of mind. If, for instance, a passionate smoker reads information about the danger of smoking, this will create cognitive dissonance in the person. According to the 'cognitive dissonance' theorem, the smoker seeks a reduction of cognitive dissonance. How could cognitive dissonance be reduced? The person could stop perceiving and reading the dissonant information. Alternatively, the person could attempt to discover other information to reject the information that smoking is a danger. Or the person could develop a ranking on the probability of dying as a consequence of smoking in comparison with other causes of death, for instance accident, hurricane, lightning, and so forth.

The important question of which strategy is eventually chosen to reduce cognitive dissonance is embedded in various social aspects, motivations, emotions and interactions – and still open in social research. While cognitive dissonance theory has been influencing scientific procedures since its arrival in the 1950s, research on motivations, efforts to reduce cognitive dissonance and the different ways people choose to achieve a better or pleasant state of mind has been investigated by social psychology, cognitive science as well as economics to this day (Harmon-Jones and Mills 1999).

As already mentioned, one striking result of cognitive research is that the cognitive or learning procedure never starts from zero. In contrast

to a machine such as a car, it is not possible to downsize the knowledge and experience back to zero by turning the key. Any conveyed information will therefore dock to the acquired knowledge base and experience of a person, the so-called cognitive representation. The cognitive capacity and information processing of a person cannot be explained by referring to the person as an empty box that should be filled up with information. This would run counter to the research of cognitive, language and learning sciences. Moreover, it would contradict the assumption that information is an interrelated object as modelled by the research of cognitive and language sciences. Perceptions, meaning, and understanding are not mechanical outcomes of a linear transformation of information. This is accepted by modern sociology, organizational theory, and new institutional economics (Streit, Mummert and Kiwit 2000; Streit 2009). It should, therefore, not be neglected in the literature on central banking and monetary policy. I would like to emphasize that economics as a social science uses everyday language to develop theories and hypotheses. Economics is also the result of language-based and communicative interactions.

The heuristic methods outline the procedure of adaptation and reception based on the acquired knowledge base, emotions, and behaviour, which are configured and reconfigured by distinct experiences, cognitive procedures, and interactions with people and/or institutions. Modern cognitive and learning sciences describe information processing as both a receptive and a constitutive process (Snyder and Stukas 1999; Sullivan, Snyder and Sullivan 2008). A procedure in the receptive mode of information processing enables understanding by a person's ability to steer their attention and perceive information against the background of their acquired knowledge. This receptive mode is accompanied by a process of personal selective evaluation and reflection on the information.

The constitutive process of information processing describes the roles of cognitive representations of intention, facts, and feelings, which all have been mostly learned by the individual. According to recent research in scientific debates there is no existing controversy about that: Learning is dependent on emotions, feelings, and memory. There is a consensus to accept the individual as a learning person and not an empty container. Moreover, the understanding of information is linked first to the acquired knowledge of a person and impregnated with particular issues of judging. Secondly, the assessment or judgment of the information is connected to the first aspect and dependent on the relevance of the information. The latter is not supposed to be known.

To sum up part 2.2 concerning the constitutive process of information processing and information as a related object: information processing as a constituent procedure is inevitably impressed with an individual's cognitive capacity, acquired knowledge, experiences, and expectations. It follows from this that first and foremost the behaviour of agents involved in the financial market cannot be forecast by the delivery of information from the central bank without considering how this *information as a related object* will be acknowledged or understood by the public.

2.3 The interaction dimension

I turn now to the second dimension of the conceptual framework of communication. Although it may be somewhat irritating to differentiate interactions from context because all kinds of interactions take place in a changeable context, I would nevertheless propose this distinction for the sake of clarity. Interaction can be distinguished into theories which deal with the interdependence of *structure and actions* and theories which focus on *understanding* and judgment. As I have already emphasized, the modern view no longer presumes that central banking works against the market but rather *'through the market'*. The aim of this chapter is to link this (*through the market*) to communicative interaction, hence to language and speech. The consequence is that central banking must focus on the interactions between structures and action. Since interactions are based on the use of language, the central bank must analyze the communicative interactions.

2.3.1 The interdependence of structure and action

The central bank's context is an ingredient of the communicative interactions among agents in the financial markets. This context is also framed by the phenomenon of 'double contingency' regarding the interdependency of the agents' expectations. The term 'double contingency' emphasizes a pattern of social interaction of two interdependent persons – as a minimum. It emphasizes that communication is in no case a one-way street. Paying attention to communicative *interactions,* that is, to the 'corresponding person', is implied by 'double contingency' (Parsons 1961). The consequence is that views of communication in which meaning and understanding are supposed to be given as representations of the sender's mind or the sender's mental state are insignificant.

In the light of the 'double contingency', I would like to add that communicative interactions of agents are described as social interactions

that arise out of people's articulated interdependency. The expectations, wishes, intention or information are *articulated* expectations, *articulated* wishes, and *articulated* information – and, hence, related to others. Expectations, wishes, intention, and information are not hidden mental states (Muchlinski 2006).

The theoretical framework to approach communicative interactions also entails the acknowledgement of *intersubjectivity* (Fullbrock 2002). The term intersubjectivity is not restricted to the interactions of people. Current research in organizational theory and institutional economics emphasizes the interdependencies of institutional structures and communication as a mode of intersubjectivity – for instance, 'structuration theory' as propounded by Giddens. 'Structure is not "external" to individuals…; it is in a certain sense more "internal" than exterior to their activities in a Durkheimian sense' (1984, 16). According to Durkheim, sociological and social procedures are not rooted in psychological states. They are rooted in social interactions. Individual agents and collective agents communicate through their actions and interactions. By this they also build and rebuild structures in social context. Giddens: 'Structure, in its broadest sense…should be understood as rules and resources, recursively drawn upon and reconstituted in the process of interaction.'[5] He argued similarly to Wittgenstein, who had emphasized that the term rule as applied to a social context is not bounded by definition; that is, rules exist not by definition, but by practice. Following a rule and acting in context therefore implies *creating the rule by acting.*

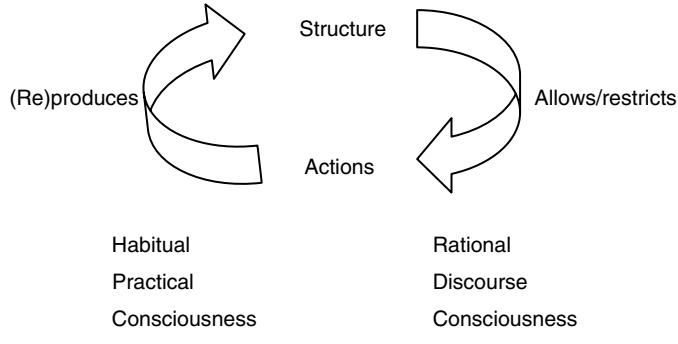
Social practice implies acknowledgement of the modes of acting, that is, the language activities and knowledge of procedure in social practice:

> In analyzing social relations we have to acknowledge both a syntagmatic dimension, the patterning of social relations in time-space involving the reproduction of situated practices, and a paradigmatic dimension involving a virtual order of 'modes of structuring' recursively implicated in such reproduction. (Giddens 1984, 17)

Acting agents do not merely produce but rather reproduce and shape the situation. By acknowledging their own experience and acquired knowledge, they configure the paradigmatic environment which frames further actions.

In contrast to macroeconomics, where conveying information through communicative acting has been neglected, the sociological approach to research of organizations and institutions in the 1970s

defines the actions of institutions as social practice or social interactions (Sydow and Windeler 2000). The communicative interaction of agents in organizations, institutions, and markets encompasses hermeneutic principles and interpretative schemes. The following diagram shows that structure is not externally given, rather it is dependent on actions and vice versa. This interdependency is of great importance for the approach to communicative interactions of central banking according to the modern paradigm of central banking. Giddens (1984) emphasized the interdependence of structure and acting that I wish to depict in the following graphic:



Giddens termed the interdependence of structure and action as the interdependence of 'micro-action' and 'macro-structure'. The agent's decision-making and interaction is framed by a macro environment that is influenced by the action. The graphic above makes it clear that the action is embedded in customs or habits and is also rational. Moreover, a particular action is based on habitual action in practice. Habitude encompasses the *body of knowledge*. This *embodied knowledge* or acquired knowledge frames rational action and is influenced by the habit. The relationship between the structure and the action is a gradually changing one. Whereas the habitual action is embedded in custom – that is, education, acquired knowledge, experience, and learning capacity – the rational action is oriented towards seeking a common goal in practice. The interdependence of structure and action also implies the interdependence of cognitive capacities. Practical consciousness is based on custom while discourse action is framed by modes of strategy and interactions.

The action necessarily takes place *in* social contexts which create and configure social structures, rules, resources, and institutions. By acting,

agents always focus the pattern of structures in social systems on reflective action. Giddens described this analogy with the use of language by following Wittgenstein's approach to language. The constitution of social reality and its maintenance by social interactions are based on acting and the use of language. For instance, Gidden's 'structuration theory' emphasizes the significance of the constitution of social institutions, rules, and resources by social interaction. It focuses on the interdependence of agents and institutions in practice. It is based on epistemic and theoretical meaning and inevitably connected with the use of language in practice. Giddens (1986) outlined his consideration on the use of language and action with clarity:

> Structure here presumes the idea of an absent totality. To understand the sentence which the speaker utters means knowing an enormous range of rules of a syntactical[,] ... semantical (and pragmatical) kind which are not contained within the speech act but are nevertheless fundamental to understanding it or to producing it. It is a parallel idea of structure (as an absolute totality) which I hold to be important as a concept for the social science as a whole, and as basic to the notion of duality of structure.

Reflexive action of agents in social contexts implies that agents neither analyze the grammar rules of language before using the language nor analyze the rules and resources in which social institutions are embedded before acting.

The act of sharing reactions, knowledge, and judgments among group members is not comparable with sharing an apple or bread by slicing it into equal parts. To diminish the whole into its parts implies eliminating it rather than creating the meaning and understanding in the communicative interaction. Sharing is not based on an explicit agreement or written document such as a consensus. Sharing is a procedure involving acting in the particular context and, hence, by the use of language.

What follows from this regarding agents in the financial markets? First: agents perceive and reflect their action in practice by adapting it to their wishes, motives, and expectations to develop meaning and understanding in a situation.

Second: agents use their base of acquired knowledge, experience, and emotions to recompose it through distinct experiences and cognitive procedures. They recompose a huge variety of perceptions, knowledge, and experiences in order to maintain their ability to act in a situation.

By acting, the agents form and reform their ways of acting and, hence, inevitably, the social structures.

I would like to add to Gidden's view a few considerations. The sociological point of view is relevant to economics, particularly to central banking *through* markets, because hermeneutic principles and interpretative schemes imply stepping beyond the view that concepts or the meaning of words and sentences, hence the understanding, are ontologically given or fixed. Economics and economists are used to working with quantitative methods and models which are based upon on exact definitions, deductive reasoning, and measurable entities. Any interpretative or hermeneutic approach is supposed to be superfluous or undesired. There seems to be a prevailing sense in most branches of economics that it has nothing to do with words, language, discussions, communication, and understanding. Interpretation is not needed because of the measured facts and data. However, facts, data, and measurements have to be described and interpreted as methods and, additionally, the means of their creation need to be explained.

As I have shown in Chapter 1, the measurement of monetary growth rates, or monetary aggregates, and the number of projected paths of monetary targeting were declared to be precisely defined. Nevertheless, it was insufficient to understand the new technique. In particular, the Volker era documents the switch to debate on whether and how the communication and language of a central bank should play a role.

For the sake of illustration I would like to move to another paragraph in the FOMC transcript of 1979. Volker explained that the projected path of monetary growth rates also implies the necessity of judging the development of the Federal Reserve funds rate and the decision-making of the public. Moreover, a deviation from the path implies the need to inform the markets about the implications of the new technique:

> I think we would attempt, probably not very successfully, to avoid telling the market if we hit the [constraint] in more normal circumstances or precisely what the range is. But they're going to by smelling around for it just as they do now and I don't know how successful we would be in avoiding that entirely. All I'm saying is that perhaps we can try to disguise the operations by doing them at a quarter point less or letting the rate go a quarter point or a half point above [the constraint] for a day or so. But the market is going to be feeling for where the top or the bottom of that range is if [the rate] goes persistently in one direction or another. And if it does, we can get in a situation, as I said earlier, where it's just going to lock itself against

> the upper level or the lower level and stay there. (FOMC Transcript 10/6/1979, 26)

Volcker accounted for the consideration that communication and discussion would change the situation compared with delivering information to the market. The FOMC sought to avoid an interpretative or hermeneutic approach by the market participants to its own strategy, a strategy which was neither fully explained nor described at that time, but was rather a 'smokescreen':

> There is an immediate advantage in the publicity; there is a disadvantage not very far down the road if people read this as a commitment and in fact we are not going to be able to live up to that commitment. (FOMC Transcript 10/6/1979, 27)

This FOMC quotation shows that discussions and language are elementary to the interdependence of structure and action. In contrast to other areas of macroeconomics, the modern view of central banking demonstrates that the interdependence of structure and action cannot be avoided. In fulfilling its mandate a central bank cannot ignore the market reaction as a response to its own action. It is important to acknowledge this interdependence and to leave behind the notion that central banking works on a linear input-output-relation between a central bank and the public. The 'base-drifts' of the FOMC, introduced under the Volcker era, document the constitutive role played by language and communication. Inasmuch as the traditional model view did not serve as a framework for monetary policy in times of stagflation, Volcker stepped beyond purely deductive reasoning models of monetary growth rate targeting and the premises of the monetarist view. As noted in Chapter 1, he assessed that era as a 'monetarist experiment in practice' and, hence, supported the view that money is not neutral.

The fear that talking to the public could be understood as a commitment to particular further decisions (as stated by Volker in the above citation) had been on the agenda of the Federal Reserve for a long time. Talks and communication, or at least explanations of HOW, WHEN and WHY the Federal Reserve was acting, were for a long time interpreted as an 'open mouth policy'. Communication and talks were interpreted through the lenses of the Barro-Gordon and Kydland-Presscott model view as impediments because the FOMC gave reasons to anticipate its monetary policy strategy, whereas the model view maintained that only unanticipated monetary policy matters. The Federal Reserve was

accused of not being able to act efficiently due to lost credibility and being merely a 'hostage to market sentiments'. Since it is impossible *not* to communicate through 'monetary mystique', the FOMC was compelled to learn to communicate its own strategy and view. Therefore, the FOMC – and of course other central banks which are not examined in this book – must respectively be seen as a learning organization or institution. The learning organization is a familiar figure in the modern literature on organizational learning and institutional economics (Sydow, Schreyögg and Koch 2009). This literature is concerned with questions such as how individual learning could become institutional learning and how interactions and communication create knowledge on an institutional level. The question of if a central bank should develop its strategy along a path of dependence or not is still in debate.

More critical is the idea that cognition and knowledge are *embodied* in structures, that is, organizations and institutions, which allow or restrict rational actions (King 2004). Organizational literature can be traced back to Weick (2009/1995), who introduced the organization as a 'sense-making system'. The sense-making procedure is seen in the interdependence of structures and actions. This also refers to the investigation of organizational evolution (Sydow 1992).

The intellectual roots of a learning institution are in analytical philosophical, for example, Gottfried Frege (1892), Bertrand Russell (1914), Ludwig Wittgenstein (1958) and psychological science, for example, Piaget (1974). In economics it is rooted in Hayek (1952). The reference to embodied cognition can be expanded by a reference to embedded recognition. Both frame the approach to communication as a communicative interaction. Whereas Wittgenstein emphasized the meaning of words and sentences, Frege and Russell introduced the distinction of sense (connotation, intension) and reference (denotation, extension). According to Frege, the 'sense' is the way in which something is 'given'. Given does not mean it is given like an object, such as a stone or car, but that it is given *by perception*. The reference is towards something which is given – perhaps one could say, established – *by* perception and, hence, it refers to an 'indeterminate' reference.[6]

Regarding the patterns of action, we can conclude that meaning and understanding comprise communicative interactions. According to the literature and central banking, it is not surprising that the implications of communicative interactions are recognized unavoidably in cases where communicative interaction fails unexpectedly. One illustration is when Bernanke, who was expected to bring clarity to the Federal Reserve's monetary policies as the new chairman, got into hot water

when he explained to a journalist in a private conversation that he had not turned dovish on inflation. This incident, which occurred during a time when financial markets were especially sensitive about tight monetary policy, provoked market uncertainty and media criticism.

A lot of media criticisms were also on the agenda during the Volcker and Greenspan era. Greenspan's way of communicative acting – his use of language – provides a good example for new and distinctive communicative interactions with financial markets. A lot of work needs be done here in order to evaluate it precisely. The 'Greenspan prose' (Sicilia and Cruikshank 2000, Woodward 2000), as his use of everyday language is labelled in the literature, initiates the perception of the Federal Reserve's environment by agents in the financial market. One important aspect should be underlined here. A significant pattern of Greenspan's communicative interactions was that he did not communicate through a coded language. Let us resume with this consideration here: since the Volcker and Greenspan era, the financial market has been learning how important the use of language is according to the pattern of monetary policy actions and how important it is to understand miscommunication.

Attempts to define the notion of communicative interactions are often linked to a description or to a definition of *mis*communication: a. lack of clear or adequate communication; b. an unclear or inadequate communication. (Coupland, Wiemann and Howard 1991) Similar to the term communication, the term miscommunication is imprecise and ambiguous. Due to everyday language, neither exactness nor non-ambiguity of the language in use is achievable (Taylor 1992). What follows from the misleading nature of communicative interaction can be seen for itself: 'By studying what has gone wrong when communication breaks down, we seek to understand a process that goes unnoticed when it is successful' (Gumperz and Tannen 1979, 307; Gumperz 1982).

Let us conclude this short consideration about miscommunication thus far: The process of understanding seems to be a process in which no doubts about the meaning of utterance emerge. Communication is always based on the reciprocity of space and time interrelated to people. One can refer here to the epoch-making work in social sciences and humanities on communication by Paul Watzlawick and co-authors (Watzlawick, Beavin and Jackson 1967). The authors investigated different kinds of situations, modes and forms of communicative interactions. Their results are persuasive if, for instance, we look to the history of the Deutsche Bundesbank until the launch of the European Central Bank (ECB). The Bundesbank (2000) communicated through a persistent

avoidance of explaining its decisions and policies to the public, that is, it communicated non-interactively. Even in the case of people or an institution, represented by its speaker or chairman, deciding not to respond – which according to Coupland et al. (1991) is interpreted as a non-*action* or non-*response* – this behaviour will be understood as a *particular* kind of communicative reaction regarding the theory proposed by Watzlawick et al. However, the miscommunication cannot be solved by a model of linear information transformation. As modern language scientists explain:

> 'The language use and communication are in fact pervasively and even intrinsically flawed, partial, and problematic. To this extent, communication is itself miscommunicative ... ', i.e. it is a misconception of what communication should be. (Giles and Coupland 1991)

Communication and language cannot be treated as an exact, unambiguous, measurable entity, which could be sent by a linear transformation. Therefore it is not an appropriate demand in social sciences. Consequences of this demand are expounded by Eisenberg and Phillips (1991).

This feature of communication is to be seen above all as an interactive process among the speaker and the other people involved, for instance the chairman of the Federal Reserve and the institutions in financial markets, respectively. Communication is an interactive procedure which inevitably also changes the communication structures and relationships among the participants.

What can be rationally presupposed regarding information processing is the following: Irrespective of their distinct motives, preferences, and different ways of perceiving and responding, agents in the market – like other people – are endowed with approximate similarities of responding or reacting. Otherwise no communicative structure in the world, no language, could be implemented and, hence, no success in communication could be achieved. To put it more concisely, no learning would be possible – not even the learning of a language. Agents in the markets act as real agents, who have certain motives, persuasions and perceptions of norms. Economic agents – like others – are compelled to perceive, learn, adapt, and also understand the actions of others in the market. They must perceive what happens from the actions and reactions of other participants in comparison to their own actions. The agents act on the communicative interactions, that is, on meaning and understanding. The agents' preferences are related and

embedded in interactions with other agents and, hence, they contribute to the evolution of norms.

Akerlof argued macroeconomists still neglect the fact that the preferences of agents are *not* fixed entities as presumed in macroeconomic theories. Whereas norms guide economic interactions, preferences and, hence, economic interdependencies, macroeconomics does not deal with such norms. What is important to note here is that norms and preferences are not rooted beyond economic interactions. While psychology and sociology deal with motives and preferences, these issues are not discussed in macroeconomic theory. Akerlof (2007, 19) puts it succinctly:

> Such preferences are a central feature of sociological theory, but they have been all but totally ignored by economists. Inclusion of such norms in utility functions makes Keynesian views of the macroeconomic consistent with maximizing behavior – the maximizing behavior of real people. It simultaneously invalidates each of the five neutralities.

Agents build up their expectations regarding market development, their preferences, and habitude. It is important to acknowledge that people assimilate their knowledge, reactions, and judgment in interaction with one another. Agents have no choice but to do so. What is correct for academic habitude or the rules of the game in an academic discipline is also true for the interactions in distinct realms, such as the interaction between the financial market and central banks.

Akerlof (2007, 4) refers to Bourdieu's work on habitus. Here I provide some brief textual evidence from Bourdieu's work. His work provides an accurate approach to different parts of societies, their cultures and capital. The expression capital is related to capability and capacity to develop skills and resources (Calhoun 1993). Bourdieu's (1984, 2005) analytic apparatus is composed of conceptual tools such as habitus, field, and capital. He described capital as a resource, that is, as a form of wealth that yields power to people – according to their adherence to certain classes, that is, the social position they hold. Bourdieu articulated the importance of the immaterial forms of capital such as cultural, symbolic, and social capital. He emphasized the possibility of converting one of these forms of capital into another. This mobility is part of his key concept habitus. He focused on a multiform kind of convertible capital or capability of participating in a game. Bourdieu outlined social reality not as the interdependencies of structures and actions,

but as a matrix of perception that occurs against the multidimensional background of different individual habitudes framed by social circumstances. He explained:

> The social world can be conceived as a multidimensional space that can be constructed empirically by discovering the main factors of differentiation ... by discovering the powers or forms of capital .... It follows that the structure of this space is given by the distribution of the various forms of capital, that is, by the distribution of the properties which are active within the universe under study – those properties capable of conferring strength, power and consequently profit on their holder .... These fundamental social powers are, according to my empirical investigations, firstly *economic* capital, in its various kinds; secondly *cultural* capital or better, informational capital, again in its different kinds; and thirdly two forms of capital that are very strongly correlated, *social* capital, which consists of resources based on connections and group membership, and *symbolic* capital, which is the form the different types of capital take once they are perceived and recognized as legitimate. (1987, 4)

Unlike cultural capital (education) or social capital (people's connections or networks), economic capital is 'immediately and directly convertible into money' (ibid). What directly follows from this to central banking as interactive procedure and macroeconomics is the following: agents in the market also aim to transform symbolic, social, and cultural capital into money, that is, higher earnings. Admittedly, this is a narrow view of economic motives; nevertheless, it is the reasonable view.

Bourdieu's treatments of cultural capital deals with two key issues: the 'social space' and the habitus. The social space is defined by the objective social position a person holds and by their 'lifestyle', which depends on the base of economic capital, cultural capital, and norms. Norms are differently defined and accepted as embedded norms in various social positions. He emphasized the interdependence of these different kinds of capital and people's endeavours to attain, arrange, and rearrange them. Bourdieu argued that a 'lifestyle' is rooted in the daily experiences of the individual regarding their dependencies on a particular social position. It is like an individual shaping their life. More importantly, 'lifestyle' indicates the preferences of the person and, hence, their social position. Preferences are perceived by others through actions. Preferences are part of the interactions and are rooted

in social position. Preferences and norms guide the interactions of people such as what should be read, consumed – goods, culture, material things – bought, learned, or done.

The concept of habitus indicates that lifestyle is influenced both by the social surroundings and the individual's interests. The objective moment or social surrounding encompasses historical patterns of the distributions of various resources and the trajectory of various agents in different social fields. The individual is driven by his/her own interests to attain a social position. These individual interests are both socially impressed and historically configured. The concept of habitus is a source for a strategy and linked to the social position as sketched in the previous paragraph (1984, 19). Playing a game is also a strategy to organize and coordinate social activities. Bourdieu's theory of interaction implies a way of developing and shaping the practice. Bourdieu defined habitus as follows:

> The source of historical actions, that of the artist, the scientist, or the member of government just as much as that of the worker or the petty civil servant, is not an active subject confronting society as if that society were an object constituted externally. The source resides neither in consciousness nor in things but in the relationship between two stages of the social, that is, between the history objectified in things, in the form of institutions, and the history incarnated in bodies, in the form of that system of enduring dispositions which I call habitus. (Bourdieu 1990, 190)

The concept of habitus is the *modus operandi* based on the past and acting out in present to shape a person's future within a social realm. The habitus,

> functions at every moment as a *matrix of perceptions and actions*, and makes possible the achievement of infinitely diversified tasks ... and (as) an *objective event* which exerts its action of conditional stimulation calling for or demanding a determinate response, only on those who are disposed to constitute it as such because they have a determinate type of disposition. (Bourdieu 1977, 83)

Bourdieu was concerned with the question of how different people act and struggle in different projects in order to improve their relations and different forms of capital to imitate the social fields they are part of. He explained that the pattern of social behaviour remains stable over a long time. Although the habitus is not a given, it cannot be changed all

the time. It is part of the acquired knowledge base due to the recognition and learning capacity of the individual:

> Each agent, wittingly or unwittingly, willy-nilly is a producer and reproducer of objective meaning. Because his actions and work are the product of a *modus operandi* of which he is not the producer and has no conscious mastery, they contain an 'objective intention' ... which always outruns his conscious intention. (1977, 79)

To sum up this excursus I would like to emphasize that norms and preferences are not changing all the time, because they are not given externally to the individual. As part of the individual which is embedded in social actions and structures, norms and preferences consist of inertia. Like the 'lifeworld' of Habermas, a habitus cannot be sold; that is, there is no way out of it but rather a continued reflection on the relation between the rules *and* history of institutions *and* the acquired knowledge base including persuasions, preferences, and motives. Whereas Bourdieu proposed a more pessimistic view on the matter of whether a habitus is changeable or not as time goes by, Habermas emphasized – according to his terms of lifeworld and language-based action and, hence, linguistic commitments resulting out of it – that any changes in lifeworld are part of the agreement and the discourse.

In Bourdieu's view, the coordination of social actions is described as a theory of action, which also draws attention to the concept of 'field' or the 'social space' impregnated by economic, cultural, and social 'capital'. However, at this point I would like to add that acting implies acting with others in the same field to attain social coordination based on communicative interactions.

2.3.2 Understanding and judgment

The previous paragraph can be amplified by an economic example which describes the importance of the agent's economic interactions, understanding, and judgment.

The assessment of knowledge about current market variables and the expectation-building process cannot be achieved by a deductive calculation, but by assumption. As Keynes argued:

> The existing market valuation ... is uniquely correct in relation to our existing knowledge of the facts which will influence the yield of the investment, and that it will only change in proportion to changes in this knowledge; though philosophically speaking, it cannot be

> uniquely correct, since our existing knowledge does not provide a sufficient basis for a calculated mathematical expectation. (Keynes, C.W., vol. VII, 152)

As Keynes explains, the agents in the market do not act as atomistic entities, but as aiming for an 'average opinion'. The perception of the 'average opinion' provides the basis for the decision-making procedure in the context of uncertainty (C.W., II, 156). The term 'average opinion' links individual knowledge to others. More importantly, it links the individual acting within the social context as an actor in the market. Gaining knowledge of the 'average opinion' of other agents is based on communicative interaction and, hence, on the language in use. The reliance on the 'average opinion' implies the agent's intent 'to devote our intelligence to anticipating what average opinion expects the average opinion to be' (ibid). What at first glance seems to be trivial has to be reflected upon as an elementary force in creating economic reality. Therefore, I propose the acknowledgement that some areas of economic realities are also created by communicative interactions. The financial markets in particular are driven by expectations of the future prices of heterogeneous market participants. These expectations are not mental states or thoughts, but rather actions in different contexts, that is, decision-making procedures in markets.

From the viewpoint of a Keynesian macroeconomic the financial markets reliance is based on 'average opinion'. It implies that one's motivation to make a decision to buy or sell financial assets will be always compared with the supposed knowledge and information other agents in the financial market are supposed to be endowed with. The Akerlof argument comes into effect here because the decision to buy or sell depends not only on one's own motivation but rather on comparisons with other agents or people. The individual interacts by focusing on his or her knowledge in comparison to the supposed knowledge of other agents. Keynes outlined the decision-making by the metaphor of 'beating the gun' in the

> 'battle of wits to anticipate the basis of conventional valuation a few months hence ... ' to describe the requirement of interaction in the market (Keynes C.W., VII, 156). This 'battle of wits' is anchored in conventional judgment of market procedures, 'it can be played by professionals amongst themselves.' (ibid)

Without such presupposed similarities between interacting agents in the financial markets or other epistemic and linguistic communities,

there could be no meaning and understanding at all. This is also true for the conveyance of information in a public sphere by a public institution (Littlejohn 1999). For example, the information given by a central bank to the public is addressed to different agents in the financial markets, different experts of the media and politicians. All of them have different motives and preferences. The release of information implies the creation of non-linear communication structures. A certain feature of the decision-making procedure and interaction in financial markets is that we share reactions, judgment and knowledge of other people in the linguistic community – or a professional language-game (Keynes). The term 'average opinion' is also addressed to an epistemic and linguistic community because knowledge is only linked to other people by language-based activities. Haas (1992, 3) defined the epistemic community as a combination of formal and non-formal characteristics:

> An epistemic community is a network of professionals from a variety of disciplines and backgrounds, they have (1) shared normative and principled beliefs, ... (2) shared causal beliefs ... , (3) shared notions of validity – that is, intersubjective ... criteria for weighing and validating knowledge in the domain of their expertise; and a common policy enterprise. (Haas 1992, 3)

In addition to those formal criteria, an epistemic community can be identified by certain personal criteria that members of the epistemic community are supposed to have in common:

> Members of an epistemic community share intersubjective understanding; have a shared way of knowing; have shared patterns of reasoning; have a policy project drawing on shared causal beliefs, and the use of shared discursive practices; and have a shared commitment to the application and production of knowledge. (Haas 1992)

The linguistic community can be described by a reference to analytical philosophy. Wittgenstein noted this in his *Remarks on the Foundation of Mathematics* (1983). He wrote:

> 'Language, I should like to say, relates to a *way* of living. In order to describe the phenomenon of language, one must describe a practice, not something that happens once, *no matter of what kind*' ... 'Interpretation comes to an end'. (Wittgenstein 1983, 335)

This brings us to John Searle (1969), who proposed theories focusing on understanding. Searle's key consideration was that the 'speech act' is guided by different constitutive rules.[7] The speech act theory focuses on different types of speaking activity – for instance, asking, maintaining, requesting, begging, greeting, praying, promising, or proselytizing. In using words, the action itself is implemented. According to the speech act theory, an utterance should be seen as a composition of different components of expression. Although language plays an important role in creating institutional facts, such as money, wedding rings, identity cards, passports, driving licenses, and so forth, the later Searle (in the eighties) denied that all institutional facts are composed or textually composed by language or by speech acts. Sentences and speech acts possess a meaning and also a semanticity. They contain conditions of truth and of fulfilment. The fulfilment is not ontologically enforced, but through acceptance by society. This acceptability can only be created by a commitment from society. Wedding rings, identity cards, and driving licenses are also to be seen as indicators of a particular status, which also implies demands of fulfilment (Searle 1995). Like the later Wittgenstein, Searle also expounded that 'speaking a language is engaging in a (highly complex) role-governed form of behavior'. Speaking a language is not simply the use of words or its additive composing to a sentence as a whole, but speaking a language is 'a part of a theory of action' (Searle 1969, 17).

One striking failure of Searle's view was that his proposed decomposition of the different types of speech acts according to their assumed presumptions, intentions, or consequences should be investigated as a conceptual connection of different kinds of communicative interactions and not as isolated elements. To provide an analysis of a particular speech act, therefore, requires investigating the underlying interactions as a whole, that is, as a procedure arising out of the manifold of interactions. Searle abandoned his goal of analyzing the different relations created by speech acts, mainly because he accepted that it is not possible to judge all speech acts. The creation of speech acts is infinite. Speech acts are created differently in different contexts by different people. They are not listed in a catalogue. However, an understanding of future speech acts is not possible. This understanding is not achievable by a decomposition of a future differentiated sequence of its components. Inasmuch as the use of language is not to be seen as the reconstruction of the mental state or thought, the use of language itself configures the context of actions, the actions of central banks.[8]

Searle stated that speech acts were supposed to entail all possible ways of acting. He tried to differentiate all types of utterances in a classification of speech acts and its presumed effects. Criticism of this classification and its assumptions led to an abandonment of the speech act theory in the 1960s and 1970s. In his later work Searle picked up Wittgenstein's consideration of the rules which permeate our life pattern and tried to develop a conceptual differentiation of his approach to language as a way of acting (Tsohatzidis 2007). Since the investigations by Wittgenstein in the late 1920s, it has been more widely accepted that the way of speaking is also a way of acting. This view acknowledges the constituent role of language.

It is necessary to refer to the acquired knowledge of the world that agents have. It implies that the status of beliefs, persuasions, intentions, and expectations of both the speaker and the hearer are dependent on the context of the inquiry. It follows from this that the meaning of a sentence is neither given by the speaker's intention and mental state, nor by a recomposition of separated words. To share the understanding or judgments of other market participants implies participating in the language-game. Wittgenstein described a 'language-game' in his *Philosophical Investigation* as the way of using language, which is clearly a way of interacting:

> Here the term 'language-game' is meant to bring into prominence the fact that the *speaking* of language is part of an activity or of a form of life. (Wittgenstein 1978, § 23)

This mode of *interaction, that is, sharing the reactions, knowledge, and judgments* of members of a group leads to the evolution of meaning and understanding. Take, for instance, the evolution of a rule. A rule created for the financial market needs to be shared by other agents in the market, that is, it is based on communicative interactions. Only a shared rule can acquire its functions as a rule in practice. I turn to this point in Chapter 5.

The theories of understanding and judgment are also treated as modern constructivist theories in the literature.[9] Modern constructivist approaches have focused on information as a related object (Gastil 1995; Lang 2000). They attempt to explain information transmission as information created based on coordinative efforts by the sender and receiver, which encompasses the inevitable modes of syntactical structures and paradigmatic dimensions. Any information is constructed information since it is a result of communicative interactions. Because of the huge

and heterogeneous variety of constructivist theories on communication, it is not possible to go into detail here.[10] Modern research acknowledges the cognitive limits to steering or controlling a person's attention as a key consideration and leaves behind the assumption of perfection in human behaviour. Moreover, it acknowledges a person's supposed limited information processing capacity.

Theories of understanding and judgment, or modern constructivist theories, emphasize the role of the hearer or interpreter and try to recognize cognitive capability based on the acquired knowledge, experience, and interpretative efforts of participants to process the received information. One of these theories is introduced here as theories concerning *Verständigung* (Habermas).

The translation of *Verständigung* into English is controversial in the literature and need not be discussed here. According to Heath, the term *Verständigung* suggests both understanding *and* agreement (Heath 2001, 320). Whereas it is without a shadow of doubt that the use of language seems to aim for understanding as, for instance, Davidson argued (we communicate in order to be understood by other people), it remains controversial whether the use of language also inevitably aims towards an agreement. In this sense, agreement does not refer to the view that language is used only to bring about agreement. However, it was Donald Davidson (1984, 183–198) who worked on the function of language as both agreement and understanding in his essay 'On the very Idea of the Conceptual Scheme'. I will come back to this issue in later on.

Habermas explains understanding as the means of grasping the epistemic relationship of speech acts. The concept *Verständigung* encompasses both the theoretical approaches to patterns of communicative interactions and to patterns of understanding and judgment by focusing on the communicative interaction of both the speaker and the hearer. According to Habermas, meaning is a result of the interactive acknowledgment of an illocutionary act in which the knowledge of agents is embedded. He discussed two criteria which should be assumed as given in the case of a successful acknowledgment: a) the hearer knows the conditions under which the expressed sentence should be accepted as truth, and b) the hearer knows the conditions under which the speaker possesses certain reasons to accept an expression as truth. Habermas modified the 'speech act theory' as introduced by Austin (1962) by revising the two elements of the speech act theory, the *illocutionary* and the *perlocutionary* element. He combined the modified speech act theory with a model of social action based on language.

Habermas's (1984, 1987) approach to understanding and communicative interaction should be acknowledged as a welcomed complement to economics. He made a shift from a practical analysis towards a communicative analysis. He introduced the 'linguistic turn' in sociology, which is of great relevance to economic sciences as social science regarding communicative interacting in particular contexts, that is, the markets. Until that time the mainstream of sociology had discussed – as the mainstream of economic theory is still doing – the presumed shared motivational aspects (for instance norms, rules, and values), without referring to the constituent role of language.

To be brief: the 'linguistic turn' relegated the traditional scientific view to the past, which stated that individuals act in isolation with individual experiences and intentions guided by individual preferences. The 'linguistic turn' acknowledges that individuals create meaning by interaction, that is, by the use of language. Moreover, it is part of social acting. Rorty described the implications and consequences of the 'linguistic turn' to sciences with reference to Wittgenstein's approach to the constituent rule of language (Rorty 1967/1992; Trabant 2003). The use of language is impossible in private only because it is not possible to use a private language in order to be understood. The use of language is to be seen as a public good; it refers to a 'language-game' (Wittgenstein). Therefore it is important to focus on communicative interaction, which itself is designed and impregnated by the acquired knowledge base, the cognition or recognition capacity and the way language is used in context (Hodgson 1988). Individuals or agents act within language-games. Any use of words or sentence is part of a language-game.

Habermas's approach to understanding is important to innovations in central banking because his modified speech act theory as a model of social action based on language being the 'ultimate source of validity' departed from the image of an isolated agent who acts according to his or her own preferences, wishes, knowledge, and beliefs. Social acting is inevitably within social contexts and institutional structures and actions. The person is embedded with social experience and motivated to gain social acceptance instead of individually maximizing utility only.

Economic interdependence of structures and actions should be discussed using communicative interaction within contexts of the knowledge base. Moreover, acting in economic markets is a way of coordinating action in different markets based on the division of labour, which requires the use of rituals to come to an understanding. The individual interprets social actions, which evolve out of social interactions,

to coordinate or to act. To understand or explain social interactions and economic phenomena, one is therefore required to reconstruct the communicative interactions of economic agents, which are based on the acquired knowledge base, experience, and motives. As already outlined, the acquired knowledge base is not an individual knowledge base, but a combination of individual skills for relating to the social environment.

Moreover, the 'linguistic turn' points to constitutive rule of language use in social sciences to rebuild those theories that explicitly or implicitly still rest on the presumption that language is just to be seen as a mirror of thoughts. Habermas emphasized that individual behaviour and acting should be seen as based on the use of language within social routines, 'epistemic communities' (Haas) and social expectations. As outlined at the beginning of this chapter, the action does not start at point zero. Acting in financial and economic markets is oriented towards both the evolution of new and existing institutional facts, knowledge, patterns of articulation, and interpretation. Actions in markets are perceived in light of the average interpretation, which links individual opinion or judgment to other agents in the market. The underlying premise is that individual action is not rooted in the individual agent, but in learned, socially trained, and constructed routines of interpretation.

Habermas's communicative theory of action deals with the modes of understanding arising out of interactions. Language is discussed in its function as a shared good. Decisions and actions of agents are linked to culture, practice, and institutional facts. A social network provides the background of acting, but is also created by social actions, since it frames selective perception and the use of language, and therefore the sense or meaning. Habermas's approach to understanding and judgment implies the creation or evolution of public commitment based on language interactions. Public commitment comes into consideration because through the use of language a public commitment has been created. Language is not private property. Hence, success in the coordination of expectations is made possible by articulation or communicative interactions. Achievement of a common goal imposes further constraints on the participants. This is exactly what gives importance to elucidating the role of language in economic theory due to engendered public commitments and accountability as well as the need to coordinate expectations of market agents.

As a model of communicative interactions in social science, Habermas's contributions provide incentives to the academic debates on central banking and interactions in economic markets. In focusing on the context of communicative action, he also draws attention to the

need to aim for acceptance and commitment by market participants. Agents in the market are not described as isolated, atomic individuals, but as social persons who aim for mutual accord based on trust, and who strive for a common understanding in order to achieve a common goal. Habermas stated that a speaker's intention cannot be transmitted to the hearer's understanding.[11] He objected to Searle's assumption that the intention of the speaker provides the meaning of speech acts. He developed a map of epistemic connections based on his view on the pragmatism of communication.

Habermas followed the modern view of language science by acknowledging that there is no distinction between the knowledge of language and knowledge of the world. It was Wilhelm von Humboldt and later Ludwig Wittgenstein who elucidated the importance of the use of language regarding the evolution of meaning and understanding (Trabant 1998; Trabant and Ward 2001). Also Wittgenstein explained that language is not a medium which is just the label of thoughts, since 'the language is itself the vehicle of thought' (1978, § 329). Language is not neutral towards thoughts. Since we cannot separate the semantic aspects from the epistemic aspects of language, it makes no sense to look at speech acts as atomic entities or as hidden entities supposedly rooted in the mental states of individuals. There exist no single 'beliefs' or 'intentions' of a speaker which give meaning to the sentence as indicated by Hume (1978) and Hobbes (1991). Hume and Hobbes stated that 'beliefs' and 'desires' have significant roles for the motive and success of an individual's action.

Habermas discussed language as a medium to coordinate the agent's mutual accord in order to achieve a common aim. More precisely, the mutual accord is based on the presumption that both speaker and hearer aim at a mutual understanding as 'the inherent telos' of any communication. Any speech act demands a mutual understanding (Habermas 1984, I, 293). Since people do not communicate in order to be misunderstood or in order not to be understood by the other person, Habermas set mutual understanding as a normative criterion. It is irrational to assume that efforts at communication are motivated by the wish not to be understood. Any language interaction encompasses accountability and commitment because acceptance of the utterance depends on the other person. Habermas outlined that speech acts are 'discourse commitments' and as such mutual agreements. Language imposes constraints because it constitutes social norms or rules. The meaning arises out of the interactive acknowledgement between the speaker and the hearer. The key notion of their

interactive acknowledgement is the 'binding and bonding force of a speech act'. Habermas explained:

> A speaker owes the binding ... force of his illocutionary act not to the validity of what is said but to the coordinating effect of the warranty that he offers: namely to redeem, if necessary, the validity claim raised with the speech act. (1984, I, 302)

These 'binding and bonding effects' underlie all communicative interactions. They are rooted in the constitutive role of language and also in the interdependence of the semantic and epistemic. It is this premise which leads Habermas to describe speech acts as a web of epistemic connections. A speech act cannot be isolated from other speech acts. The epistemic map provides an inherent connection between the meaning of an expression and the validity due to a person's cognitive capability. Speech acts, as an epistemic web, constitute the meaning of an expression.

I would like to add that this epistemic web must be founded on the presumption that speech acts are based on a shared – that is, a non-private – language. Therefore, language is to be viewed as having a constitutive role and not as being a veil of thought within the web of speech acts as stated by Heath (2001, 27). According to Habermas, speech acts are described as the continued attempts to reach an understanding. Reaching an understanding implies accepting language as the 'ultimate source of validity'. As particular elements of communicative actions, speech acts possess a compelling function since they bring about commitment and accountability. Knowing the prerequisite for an acceptance of speech acts is equivalent to recognizing the self-commitment of both speaker and hearer regarding 'validity claims'. Such 'validity claims' are norms, that is, social constructions, but neither values of the individual or individual mental states nor private. As social norms they attain validity through language-based interaction. In contrast to Bourdieu and classical sociology, Habermas (1998, 198) stated:

> If understanding a speech act depends on knowing the conditions for its acceptability then the speaker's illocutionary aim of being understood points to the further aim that the hearer should accept her speech-act offer. The acceptance or the agreement on the part of the hearer is equivalent to recognition of a validity claim raised by the speaker. It is based on the good reasons that the speaker offers in order to redeem the validity claim in discourse (or else on a credible warrant issued by the speaker that she could provide such reasons,

> if necessary.) And the hearer, with his 'yes' to a validity claim he has accepted as worthy of recognition – that is, with his acceptance of the speech-act offer – also takes upon himself, as a rule, certain obligations relevant for the sequel of interaction, such as obligations to meet a request, to trust a confession, to believe a statement, to rely on a promise, or to obey an order.

Validity claims arise through utterance or articulation. They are inherently connected with the use of language. To raise validity claims indicates that a speaker's utterance is not simply a veil of his intention, thought, expectation or desire, but articulation (Muchlinski 2006; Moyal-Sharrock 2007, 2000). The meaning of a speaker's utterance is not compositional. The epistemic connection or the meaning of a speech act is not something which has been added to the speech act later on. The embedded epistemic web is determined by its meaning. As Brandom (1994, 494) stated, 'communication is the social production and consumption of reasons'.

Understanding a speech act implies knowing the reasons for certain validity claims. Habermas wrote:

> We understand a speech act when we know the kinds of reasons that a speaker could provide in order to convince a hearer that he is entitled in the given circumstances to claim validity for his utterance – in short, when we know *what makes it acceptable*. (1998, 232)

What, then, makes it acceptable? Of course it is *not* the intention of the speaker that indicates the acceptability of an utterance. There must be supporting reasons that indicate the acceptability of an expression. The speaker and interpreter are part of the epistemic web which itself is the 'binding force'. The agents are embedded in the epistemic web, and it is for this reason that an utterance is to be seen as a 'weave' because the concepts we use in daily language are not used for a unique occasion. It was Wittgenstein who made clear that a notion is not a pretence which accompanies the intention, thought or expectation (Wittgenstein 1967, § 568, 569). The validity claims occur through utterance or articulation. Raising validity claims also incurs commitment by the speaker through the performative effect of the speech act. According to the epistemic web, any utterance appears to incur commitment with regard to further utterances.

Habermas distinguished the validity claim into three types of commitment: (1) truth, (2) rightness, and (3) sincerity (1984, I, 278).[12]

Whereas truth refers to the perceived world or situation, rightness refers to the perception within a social context and sincerity to an individual's realm of experience. By this differentiation, Habermas outlined his modified approach to speech acts and, hence, communication interactions as a non-linear but rather as a complex relationship based on internal and external considerations of the agents. The commitment to truth or to rightness has also to be understood as a realistic viewpoint according to the social environment. Insofar as the speaker and hearer share this realistic viewpoint if follows from this their willingness to coordinate in order to reach a common understanding.

It is worth noting here that the presumption Habermas proposed is *not* that every speaker and hearer harmonically coincides in their 'lifeworld' or views, but rather that they are trying to be successful as long as they are trying to communicate. The 'telos of communication' (Habermas) aims at the mutual understanding of both speaker and hearer. Therefore the key consideration of Habermas's view is this coordinative interaction based on the 'binding and bounding force of a speech act'.

In the case of 'communicative action ... the consensus achieving force of linguistic processes of *reaching understanding* (*Verständigung*) – that is, the binding and bonding energies of language – becomes effective for the coordination of action' (1998, 221). Whereas Habermas once had ascribed the 'binding and bonding forces' to speech acts, he now addressed it to the process of understanding an emphasis on the role of language as 'shared goods' and as an explicit coordination mechanism. He stated that the meaning of a sentence cannot be found beyond the communicative interaction since any communication interaction is based on mutual commitments in the context.

It follows from this differentiation that speech acts lead to commitments. If agents know the acceptable conditions, they also know the reasons or evidence that both the speaker and the hearer will support, that is, the participants know the conditions under which the statement can be judged to be true and right. Moreover, they recognized the conditions of sincerity. This is why a speech act gets its own claim to validity: because it reflexively refers to its propositional content. Furthermore, it is assumed that all participants in communicative interactions have the ability to judge the epistemic commitment. Habermas defended the outlined differentiation of three types of commitment – truth, rightness, sincerity – as a pragmatic pattern of judgment concerning different communicative actions (1984, I, 319f.).

Habermas basically follows an 'inferential semantics approach' because it is not possible to separate the understanding of an expression from its

circumstances. This argument was made by Dummett (1981). The term 'inferential semantics' is a key notion in language sciences describing the view that the truth of a sentence is not inherent to the words the sentence is composed of, but to the context the sentence relies on. No falsification or verification nor different methods of proving the truth or falsehood are required or judged from the sentence. The sentence refers to the context and not to a catalogue of criteria or rules. Knowing the rightness condition or truth condition of a sentence means knowing the circumstances of the sentence. Knowing implies – as Michael Dummett called it – the 'descriptive content' (1976). Knowing, therefore, implies the *pragmatic point of view* Habermas emphasized in his approach to communicative interactions. The truth condition encompasses the rightness condition regarding the evocation of the meaning of the utterance and the consistency of the validity claims.

By participating in communicative action with speech acts, we get involved through the commitment of our utterances and action ('matching deeds to words'; 'we do what we say and we say what we do'). Later on Habermas (1996) précised that a communicative action implies a mutual understanding as a certain mode of action coordination, therefore the validity claims gains relevance for the creation of social orders, too, that is, validity claims are to be seen as normative. Participating in communication implies social involvement as well as social obligations. The amount of commitment depends on the different kinds of speech acts. Habermas differentiated between the types of speech acts in which a) statements are to be seen as assertive, b) a weak communicative action as expressive and c) a strong communicative action as regulative. In case of any dispute about the three validity claims, the speaker or the hearer is forced to demand a 'rational discourse' according to the 'telos of communication'. The assumption of rationality does not impose the obligation to act rationally rather it aims to achieve corporative acceptance and agreement through any speech act, as long as the presumption that communicating occurs in order to be understood – is actually the case. The rationality assumption is neither an empirical proof nor a description. In daily life we normally do not ask for reasons or justification as a guideline for communicative acting, we share persuasions and 'lifeworld'. This is the way understanding works – a view which is also supported by language philosophers like Davidson and Wittgenstein.

At this point the Habermas concept of 'lifeworld' enters the game. It entails certain assumptions concerning the private, cultural and public part of society as well as its rules and institutional facts. Individuals aim

for mutual understanding by coordinative interaction. The concept of 'lifeworld' materializes the counterpart to the constitutive premise of rational discourse as outlined on the previous pages.

Habermas assumed – as also Davidson et al. – any discourse follows rational criteria because we want to be understood by others. Although different discourses are motivated differently – and of course many discourses are not based on symmetry, but rather on hierarchies and, therefore, asymmetric power – it is necessary to anchor decision-making and action as rational actions. Reaching an understanding implies reference to the 'lifeworld' in order to redeem validity claims. Communicative actions provide a framework for understanding and the force for reshaping the 'lifeworld' in order to diminish the reasons for a dispute (Habermas 1987, II, 63). To achieve any understanding, the speech act must be interpreted as based on a common language and on coordinative acting that allow the speaker and hearer to grasp the meaning, to understand.

I now turn briefly to the role the interpreter plays in Habermas's view. The interpreter is the hearer. Habermas described the interpreter as a participant of the context, in which he/she must imagine the motives of other agents in that context. The interpreter, therefore, must anticipate the objection or agreement of others. Being themselves part of the situation, the interpreter cannot judge beyond the reasons the speaker articulates. The interpreter evaluates the reasons of the speaker according to the context. In short, the interpreter must reconstruct the reasons other agents have put forward in order to understand and work out a 'rational interpretation'. Habermas explains this consideration as follows:

> The interpreter cannot become clear about the semantic content of an expression independently of the action contexts in which the participants react to the expression in question with a 'yes' or a 'no' or an abstention. And he does not understand this yes/no position if he cannot make clear to himself the implicit reasons that move the participants to take the position they do. ... But if, in order to understand an expression, the interpreter *must bring to mind the reasons* with which a speaker would if necessary and under suitable conditions defend its validity, he is himself drawn into the process of assessing validity claims. (1987, II, 115–116)

Without a doubt, Habermas was influenced by Davidson as well. Among other proponents of theories concerning *Verständigung*, Davidson refers to a principle that is explained in the following paragraph.

In the 1980s Davidson emphatically developed the role the interpreter should have within the process of reaching understanding. The success of communication depends on neither the truth of a sentence nor the application of categories of truth. In his later work Davidson suspended the reference to categories of truth. He argued that categories of truth are not to be found in a list or catalogue but only in a theory of interpretation because any criteria of truth is rooted in dialog. This is not a point of controversy between Habermas and Davidson. The success of communication depends on the continuity of judgment of the interpretative theory of truth. Davidson's aim is to develop the understanding of the utterance of the speaker through a theory of understanding. Davidson did not differentiate between a theory of interpretation and a theory of understanding because he assumed the success of communication is identical with the success of interpretation. Davidson introduced his method of interpretation based on the 'principle of charity'. He wrote:

> Since charity is not an option, but a condition of having a workable theory, it is meaningless to suggest that we might fall into massive error by endorsing it. ... Charity is forced on us; whether we like it or not, if we want to understand others, we must count them right in most matters. (1984/1973, 183–198: 197)

This principle of charity is a necessary application for the interpreter to achieve a maximum of agreement between speaker and interpreter. Davidson argued: 'I apply the principle of charity across the board. So applied, it councils us quite generally to prefer theories of interpretation that minimize disagreement' (1984, xvii). This principle should be read as a guideline for any interpretation. Davidson first applied it to his model of a 'radical interpretation'.

What is meant by 'radical interpretation'? Davidson introduced a situation as radical for the interpreter if there exist no common language, no common experience, and no dictionary support in which both speaker and hearer first meet and need to understand what they have observed. Despite this strange – but not impossible – situation, both the speaker and the hearer need to strive for a common understanding. They must develop an understanding of the way one person understands the observation and interpretation by the other person. Davidson (1984/1973, 125–140: 128) wrote,

> In radical interpretation, however, the theory is supposed to supply an understanding of particular utterances that is not given in advance,

> so the ultimate evidence for the theory cannot be correct sample interpretation. To deal with the general case, the evidence must be of a sort that would be available to someone who does not already know how to interpret utterances the theory is designed to cover: it must be evidence that can be stated without essential use of such linguistic concepts as meaning, interpretation, synonymy, and the like.

Insofar as the old concepts are not applicable to understanding the new situation, the understanding of the latter is rooted in the interpretation of the behaviour of the other person. Underlined by the presumption that we talk because we want to be understood, Davidson outlined the situation of radical interpretation to discuss the efforts of both speaker and hearer. Davidson stated:

> Without this sharing of reactions to common stimuli, thought and speech would have no particular content – that is no content at all. (1991, 153–166: 159/160)

What at first glance seems to be a simple behaviourist approach to the human condition neglects the implication of the use of language. Davidson responded: 'I despair of behaviourism and accept frankly (a speaker's) intentional attitudes towards sentences, such as holding true' (1984/1979, 227–241: 231). Davidson did not rely on J.B. Watson's behaviourism and the mechanism of a stimulus-response reaction. Davidson argued that

> 'behavioral grounds are well we have for determing what speakers mean' (1991, 153–66: 162).
>
> What makes this step convincing within in his overall argument is to emphasize that any utterance and therefore judgment is inherently connected with a person an not with a pendulum.
>
> 'We have still to say what evidence is available to an interpreter.' (1984/1973, 125–140: 134).

The evidence cannot consist of detailed descriptions of the speaker's belief and intentions. Furthermore, the interpretation is not dependent on beliefs, desires, and meaning of either the speaker or the hearer, that is, the interpreter. Beliefs, desires, and meaning are not simple cognitive attitudes in Davidson's view. Beliefs, desires, and meaning are interdependent and should be integrated by interpretation, which depends on the 'principle of charity'. In this, Habermas follows Davidson. The three validity claims of Habermas are not a simple cognitive approach, since

they are inherently connected in every speech act. Davidson emphasized the interdependence of beliefs, desires, and meaning as rooted foremost in the 'principle of charity'. This principle encompasses the correction of singular utterances in case of error:

> Making sense of the utterances and behavior of others, even their most aberrant behavior, requires us to find a great deal of reason and truth in them. (Davidson 1984/1974, 141–154: 153)

The principle of charity is rooted in the use of expression or articulation which is relevant to the other person as well. An important consequence of this principle is the indeterminateness of the interpretation, which implies that there is no further given meaning. The interpretation is created in the moment of action. Davidson stated that there exist 'trade-offs between the beliefs we attribute to a speaker and the interpretations we give his words' (1984/1973, 125–140: 139).

In order to explain the role of persuasions of the speaker and hearer, that is, the interpreter, Davidson proposed two further principles to achieve understanding: (2) the principle of coherence, and (3) the principle of correspondence. The principle of coherence should lead to a high degree of logical consistency in speaking behaviour. Davidson called this 'propositional attitudes' (1991, 155–166: 158). By this he basically demanded that both the speaker and interpreter work logically consistently. For instance, the interpreter reconstructs the speaker's sentences consistently by interpreting the sentences *1, 2, ..., n* unquestioningly. That means the interpreter reconstructs the entire utterance of the speaker, that is, the conjunction of the sentences, without any contradiction.[13] If sentence A implies x, and sentence B implies y, then the premise of non-contradiction implies that sentence C implies z. Davidson insisted on the principle of coherence in these terms: a) being consistent regarding both the speaker's and the interpreter's attitudes, both have comparable attitudes; b) the speaker and interpreter should behave consistently regarding their verbal and non-verbal attitudes and, finally, c) the relation of speaker and interpreter is to be described by a 'maximizing agreement'. The latter does not imply that both agree at all times in all communicative actions, but rather that both agree on the discourse they are involved in. Therefore 'maximizing agreement' can also imply a non-agreement as long as both acknowledge that they are participating in a shared world.

The (3) principle of correspondence defines a shared world of both speaker and interpreter, which means both have access to the same

situation or circumstance. Given this, the function of the interpreter is to assign the speaker's utterance to the objects of the world. Davidson explained that the theory of action can be interlocked with interpretation if all three principles, and the above outlined three criteria a), b), and c), are satisfied. Furthermore, these principles – charity, coherence, and correspondence – include two more criteria: (d) the real world exists, and (e) the world is discernible and accessible for both speaker and interpreter.

Another quotation might provide more clarity on the principle of correspondence, because a formal criterion is not meant to bring out the correspondence of a logical deduction as proposed by Tarski (1956) (*convention-T*). Davidson explained:

> Knowledge of the circumstances under which someone holds sentences true is central to interpretation. ... (I)n case of language, although most utterances are not concerned with truth, it is the pattern of sentences held true that gives sentences their meaning. (1984/1975, 155–166: 162)

Davidson emphasized the attitude of *holding* a sentence to *be true or accepting is as true* as crucial for any interpretation (ibid, 161). This presumption also refers to beliefs and persuasions shared by the speaker and interpreter. Both create context through their beliefs and persuasions. Davidson wrote:

> The attitude of holding a sentence to be true (under specified conditions) relates belief and interpretation in a fundamental way. We can know that a speaker holds a sentence to be true without knowing what he means by it or what belief it expresses for him. But we know he holds the sentence true *and* we know how to interpret it, then we can make a correct attribution to belief. Symmetrically, if we know what belief a sentence held true expresses, we know how to interpret it. (ibid, 162)

Both principles – coherence and correspondence – should lead to a comparable behaviour of the speaker. It should allow the integration of a new hypothesis of interpretation by the role of the interpreter, that is, the hearer. The interpreter, who is the dominant figure in the process of understanding, tries to discern the speaker's utterances via a language-based emphatic and cognitive process. Davidson called this non-verbal and 'verbal attributes of attitudes' (ibid, 166). Since the above three

principles are normative claims for achieving an understanding, they are a way of defining an ideal, workable, context for the communicative interaction and interpretation. Davidson outlined his view as follows:

> A theory of interpretation, like a theory of action, allows us to redescribe certain events in a revealing way. Just as a theory of action can answer the question of what an agent is doing when he raised his arm by redescribing the act as on of trying to catch his friend's attention, so a method of interpretation can lead to redescribing the utterance of certain sounds as an act of saying that snow is white. (ibid, 161)

There is no contradiction here to Habermas, Wittgenstein, or Wilhelm von Humboldt. 'Language [is]...intrinsically social' (Davidson 1994). Language allows one to describe the behaviour of the speaker and interpreter, which leads to successful communication (Davidson 1992, 256).

Habermas and Davidson have in common the acceptance of the 'inferential role' instead of the application of categories of truth. Understanding is based on the 'inferential role' because understanding refers to communicative interaction and the context, which are relevant to institutions (North 1990).[14] To sum up this chapter: in contrast to Davidson, I would propose defining the principle of charity as a principle of commitment, which also better expresses the interdependence of the speaker and hearer and steps beyond the predominance of the interpreter found in Davidson's view.[15]

The communicative principles Habermas introduced should be seen as fundamental for all participants in discourse: Every individual is competent to talk and to express his or her beliefs, preferences, and expectations. The result of such a discourse would be that all participants have equal capabilities, rights, and competence. This view of discourse has provoked massive criticism of Habermas's theory of communicative interacting (Moon 1995).

To discriminate between Bourdieu and Habermas, I would like to emphasize that the evolution of the norms and values and, hence, the elaboration of social identity, are not deduced from shared motivation or a shared social situation but rather from a shared world. The crucial point is that this shared world includes language interaction priority and this necessarily leads to another approach to social reality, which is described by the 'linguistic turn'. Regarding economics as a social science one has to consider that people judge economic decisions in certain social situations, which are influenced by norms and

shared values of living, or 'lifeworld'. According to Habermas the latter is to be grasped as the creation of language-based interactions. It is this language-based approach to social norms and 'lifeworld' Habermas consequently worked on, which make a wide distinction between classical sociology and the communicative approach to social science. Therefore, macroeconomics should integrate the concept of habitus to replace 'abstract derivation' (Akerlof 2007) with preferences which are linked to the contemporary world.

Here it should be accepted that Habermas introduced the consideration that individuals are endowed with equal capability, rights, and competence as a normative concept. He did not provide it as an empirical proof. Communicative interaction includes the acceptance of rational action by all participants as *a prerequisite to communication*. Habermas left open how this acknowledgement could be achieved; that is, he did not explain the speaker's or hearer's persuasions, beliefs, or expectations. Here he has argued that the social context as explained in sociology sheds light on how individual preferences, beliefs, norms, values, and expectations are developed and impregnated. For instance, Bourdieu's and Gidden's approach to the interdependence of structures and actions provides supplementary arguments for the economic interaction in markets.

As outlined in this chapter, information processing as a cognitive process concerning an individual's selective perceptions, different modes of learning, and understanding is also important in order to grasp information as a non-linear transformation. The disclosure of information is not to be confused with communicative interaction and language-based heuristic. As it was argued, however, this language-based heuristic is also a supplementary part of economic interaction as well. Decision-making and judgment are language-based and not to be seen as an exchange of mental states. The introduced research in cognitive science is important for macroeconomics in order to understand how meaning and understanding evolve.

The conceptual framework of communication in its dimension as an *interactive procedure* implies that neither the sender, the message, nor the receiver are assumed to be unchangeable through time. The conceptual framework basically refers to the interactive procedure, which is understood as the continuity of changes.

2.3.3 The context dimension

At this point the third dimension enters the discussion: *How* much and *why* does context matter regarding the emergence of meaning and understanding? As I indicated above, the learning process and behaviour

of a person are not determined by the release of information, since the individual actively attempts to adapt, understand, and perceive information through an acquired knowledge base. Of course, if certain information were given by a person or an institution such as, for instance, the information 'fire', we could rightly assume that any person would try to escape the situation immediately. The information 'fire' in the process of understanding is, like other information, dependent on the context – but only in stages. The three stages above – understanding as linked to the acquired knowledge, judgment, and way of acting – would have together been taken into account in that moment of escape. The word 'fire' is independent of any situation understandable as a symbol for danger and no rationally acting person would unnecessarily stay in a dangerous situation. However, significantly different reactions by people could be imagined by using the word 'hurricane' because in some regions the event 'hurricane' is barely imaginable, while in other regions the word 'hurricane' would be understood as analogous to 'fire'.

According to monetary policy, the word 'interest rate rise' is also understood regarding the different contexts and agents with their preferences and motives. The context can be described as the environment or surroundings in which both the speaker and hearer, or group of agents, institutions, or organizations, act and configure or shape the communicative interaction. Here again we confess that the communicative interaction is not purely discussed in isolation from the context. Although it could be conceivable that if the meaning of a word, for instance 'fire', were independent of any context, the responses of people to this word would be diverse. Of course, comparable patterns of responses and reactions by different agents can be imagined.

Regarding this third dimension of the conceptual framework approach to communicative interaction, the context, we must acknowledge that the context (as such) does not cause the behaviour of people, but their interaction, responses, and (re)actions within the context. In doing or acting, people will also create new contexts. Their interactions will shape or change situations.

This 'contextualization' of the meaning should not be confused with socio-linguistic approaches. Contextualization means to recognize the surroundings of a speaker's and hearer's communicative interactions (Auer and Di Luzio 1992). This view also provokes questions such as the following: How can a context be described? Where can we draw the border of a context? These attempts to define a context always necessitate redefining it by creating another context. It is not possible to define

the context itself by reference to exact borderlines unless one creates a further illusion, for instance, defining a context by artificial rules.

We approach the concept of context to describe human actions as a web of the mixed variety of human behaviour or actions. A context is not dice or something tangible. Describing a context requires separating all human actions that are embedded in this context – with the result that we are not able to describe the context anymore. A context is like a web whose patterns are incomplete and varied in different ways. But *how* we describe the woven pattern depends on our perception and acquired knowledge and, therefore, on how we perceive the web selectively (Thomas 1995).

How can we know that we are part of a context? For instance, Greenspan elucidated that the problem of identifying a bubble economy is rooted in the problem of how to identify whether one is in the bubble. We communicate, we act, we discuss, we perceive within a context, but we do not measure in which context we behave and act. We act within a certain space and time, but this is not identical with acting in a context. The context emerges from people's way of acting. Of course, the information given during the open hours of the stock market identify space and time and, hence, the context. But the problem of identifying where the context of the stock market begins and ends still remains. The context is neither given by the location of the stock market, nor by its time of operation.

No exact definition of context is found in the literature (Kober 2002). There are, of course, good reasons for that. Whereas Habermas used the concept 'lifeworld', Wittgenstein used the concept 'world picture'. According to Wittgenstein, the world picture provides a background for decision-making and judgment. 'Above all it is the substratum of all my enquiring and asserting' (Wittgenstein 1979 § 162). We cannot change our world picture, that is, our context, like we get out of or into a car. We cannot jump out of our world picture. We are part of the world picture or context, which is like a web. A world picture is a web of a variety of persuasions or convictions. We share, *or* we do not share, that web of persuasions, beliefs, and convictions with other people. If we try to identify these persuasions by classifying them into different categories, such as α, β, χ, then we approach a web of persuasions using different categories. If we are successful in identifying all kinds of persuasions, and if we have labeled them with our categories, we will nevertheless approach a web of categories, not a context. Hence, we will not achieve a definition of the context we are part of. We could define this web of categories as, for instance, 'C'; this letter will label only a part, however. To name elements is not identical with describing it, and instead is just

the preparation for a description. A word gets its meaning, not by naming, but in the sentence, in the context. 'Naming is so far not a move in the language-game – any more than putting a piece in its place on the board is a move in the chess' (Wittgenstein 1978 § 49).

Davidson emphasized that language must incorporate or depend upon a largely shared view of how things are, that is, a context or web of persuasions.

> Communication proves the existence of a shared, and largely true, view of the world. But what led us to demand the common view was the recognition that sentences held true – the linguistic representatives of belief – determine the meaning of the words they contain. Thus the common view shapes the shared language. (1984/1977, 199–214: 201)

Davidson admitted that he is not the first author who emphasized that shared beliefs are required for success in communication interactions, since there were other authors who worked out this view, for instance, Kant, Humboldt, Wittgenstein, and Frege. Of course, there is no doubt that speaking or communicative interaction always occurs in situations or contexts. What seems to be disappointing here, because of the vagueness of the concept of context, should nevertheless provide more clarity. Regarding the use of everyday language, vagueness does not exclude clarity. As I tried to outline in the paragraph above, we are part of the context or world picture. Although the concept 'context' or 'world picture' remains vague, it is understandable in 'normal circumstances' (Wittgenstein 1979, § 24). We are always part of a context and cannot separate ourselves from it. 'There is no cosmic exile', as Quine wrote (1959, 275).

A discussion about the exact borderline of a context will only arise in those cases in which we are not successful in aiming for a common understanding. It is similar to the notion of misunderstanding (Dascal and Cuycken 1988; Dascal 2007). Only in the case we feel misunderstood are we able to outline approximately what is missing or wrong. But when we feel understood we cannot exactly say *why*. Moreover, it is not necessary to explain or to investigate *why* we feel understood or *why* we understand because *we do understand*. That suffices. For success of communication in the context, it is important to share beliefs and to refer to the 'average opinion', that is, to perceive the interdependencies. According to Habermas, the agents are rational, that is, agents aim for a common understanding, and this implies a coordinative interaction. Aiming via coordinative interactions also provides a

common view of the context world-view. After having outlined some considerations on this point it should be clear: we cannot define a context the way we define a car or the world market. Wittgenstein summarized this:

> 'So you are saying that human agreement decides what is true and what is false?' – It is that human beings say what is true and false; and they agree in the language they use. That is not agreement in opinions but in form of life. (Wittgenstein 1978 §241)

What seems to be a triviality has often been neglected in economic science. Economic interaction as language-based interaction is different from economic modelling. The context of a model is constructed as a deductive means of conclusion and, therefore, it has strict borderlines, composed of exact words, premises and, hence, conclusions. The method of deductive solution of modelling itself defines the context and the content of the chosen model. In contrast to the term context as it was used in our previous considerations, the context of a model is non-ambiguous, non-vague, and stable.

If we assume that we consider and judge the real world by applying deductive logic and methods to it, this lacks conviction. Deductive logic is based on universal and mechanic controlled formal language constructions ('*Convention-T*'). Axioms and deductive rules of reasoning and calculating are used to describe a deductive construction, but they are not representatives for scientific as such. Scientific methods are not restricted to one single method, that is, deductive reasoning.

Acting means that agents shape the context, that is, meta-model views, and also create new contexts by their modes of action based on language activities or communication. An important implication regarding the context or situation is first and foremost that any communicative interactions require the use of language as a public medium, since private language could neither be used to shape situations and contexts, nor create a new one (Capella 1987). Therefore new contributions in the language and cognitive sciences emphasize the interpersonal, organizational, and public sphere of communication in contexts (Noteboom 2007; Muchlinski 2006; Trabant 2008) which are also relevant to economics as social science.

2.3.4 Reflexive communication

Non-classical models of communication are defined as reflexive models of communication (Antos 1999, 102). The term reflexivity focuses on

communicative interactions. Reflexive models of communication initiate and create another space of perception and effectiveness. A reflexive model of communication vigorously defends the non-linearity and the non-causality of communicative interactions. Any given pattern of this non-linearity is an infinite process of reciprocal perceptions which also create a space of mutual recognition. The reflexive model is focused on the mutual recognition space and, therefore, on the context of the communicative interactions. These mutual recognitions in context are, of course, important to the process of expectation-building. The incorporation of the procedure of forming expectations also structures the space of mutual recognition. Since the theoretical upheaval in modern central bank literature occurred, central bankers have become more used to debating in terms of mutual recognition and understanding (Blinder and Krueger 2004, 327–387). However, most contributions are devoted to central bank communication as a process of delivering information by the central bank (Ehrmann and Fratzscher 2009; Gurkanak, Sack and Swanson 2005; Poole and Rasche 2003; Rasche and Thornton 2002).

I turn now to the reflexive model of communication. Reflexive models try to acknowledge the creativity of the use of language. Reflexivity and reciprocity are indicators in order to elucidate the process of understanding. In that respect, reflexive models are based on the repercussive reactions, and the associated dialogue is based on situation, context, and language in use. We could define reflexivity as a presupposition of any kind of communicative interaction. In reflexive models the effort of communication depends on reciprocal perceptions, the self-commitment towards common understanding and actions. It also draws attention to the creation of sense, that is, of the practice and surroundings of the communicative action. The reflexivity of interaction implies the need to make a commitment. Reflexive models of communication stand in contrast to the conduit metaphor, that is, to communication as a linear process and as a one-dimensional procedure.

Regarding the matter of central bank communication, it is clear that the transition of the Federal Reserve Bank towards more openness also implies a further step to self-commitment. Moreover, any dialogue between the central bank and financial markets structures and configures the space of mutual recognition and understanding. It will create further acknowledgement of economic interdependencies among the participants in communicative interactions.

We shall now move a bit further into the question of what characterizes a reflexive model of communication. Concerning the central

bank and its interaction with the financial market, a reflexive model of communication works through three particular steps, as follows (Antos 1999):

a) The central bank (A) acts; it gives information to the public and explains it, that is, the central bank communicates; agents of the financial markets (B) react and give responses;
b) A perceives B and vice versa.
c) A perceives the perception of B and vice versa.
d) In short: A (B[A]) and B (A[B]).

A knows that B will work to establish reciprocal interactive pattern. B responds to A in the established space of perception and interaction. The creation of conditions of reciprocity of perceptions of A and B also implies a web of commitment and, therefore, a new social order. Any interaction based on that reciprocity will create a new social situation which itself is dependent on the situation. The creation of the conditions of reciprocity of the perceptions of A and B – A (B [A]) and B (A [B]) – also evokes a space for forming expectations. Therefore this reciprocal conditionality provides an infinite procedure of reciprocal perceptions and inherent connection of communicative interactions. In a weak sense of the expression – for example, the face to face-situation of central bank and market – it is also possible to describe a central bank's communication with agents of financial markets as a compelling means of further development of the 'face-to-face approach'.

The refinement of internal and external communication of a central bank is a striking example (Winkler 2000). The central bank acts as an individual. This is also true for agents of the financial market because *the market* itself does not act or communicate. Therefore, the creation of conditions of reciprocity of both agents – the central bank and the agents in the financial market – configures the environment.

The conditionality of the mutual perception of A and B lead to a non-causal communication. The commitment is not rooted in a causality of interaction because language does not manifest itself in causality. Language manifests itself in meaning rooted in social interactions as described above. The social interaction with the central bank and the financial market creates social reality. This social reality encompasses the possibility of a reconstruction of the three phases as described above. It also encompasses coordination, interaction, and expectations. It makes it clear that the meaning of words depends on contexts, circumstances, and their variations. The process of building expectations of agents in

the financial market towards further development is dependent on the perceived reflexivity inasmuch as it arises out of a symmetric interaction. One important consequence is that the symmetrical development of interactions between a central bank and agents of the financial market will also lead to a self-commitment towards the other agents of communicative interactions. This self-commitment can be interpreted as a result not only of interaction, but of *reflexive* interactions and perceptions. There is no place for linearity or for the hierarchical transmission of information by a sender to a hearer.

In a reflexive model of communication, the perceived interaction evolves a system of commitment and mutual responsibility. This system can be described as a combination which is rooted in distinct preferences but composed of mutual consensus regarding the overall goals of such reflexive communication. It is more than a simple model of communicative interaction because it draws attention to the evolution of reciprocal commitment in order to shape the financial market as a social reality. The core of the reflexive model of communication lies in this. The evolved commitments by the reciprocal perceptions and communicative interactions configure the social reality.

As explained by the idea of 'face-to-face interaction', central banks' communications continuously generate new situations which the central bank itself shares – and must share – with the agents of the market. There is no escaping from that. It misses the point to argue that the central bank 'enters a situation' which has been created independently and irrespective of its own communicative actions. In contrast to the view of the classical model of communication, the reciprocal perceptions of the agents involved contribute to the situation they all share. The model of reflexive communication emphasizes the role of language, that is, it recognizes the non-neutrality of language in the evolution of social reality.

Interactive communication is an 'infinite process' of reciprocal perception. Communicative interactions and communicative patterns of actions result in and from the use of language and in routines including those of language use. Successful communicative actions will also both provide new routines and perpetuate familiar ones. Routines work as long as no failure, that is, miscommunication, disturbs communicative patterns. Miscommunication, is a vague and imprecise notion, like the notion of communication, itself, as is also true for the idea of a coded language applied to central banking.[16] At this point it is important to distinguish clearly between miscommunication and misunderstanding: In case of a misunderstanding, no agreement on the issue in

question will be possible, whereas miscommunication is inherent in all communication, according to the reflexive view of communication (Dascal and Cuyckens 1988, 219–306).

The presumption of the linearity of communication, and also the view of communication as an absolute and not relational entity, conflicts with the modern view of communication introduced by Watzlawick et al. Watzlawick, for instance, explained that communication shall be characterized by the process of reciprocity inherent in all communicative interactions. This feature of reciprocity is not present in the classical model. The aspect of reciprocity, as well as the communicative interactions, remain in the dark because they are interpreted as so-called epiphenomenon. As epiphenomenon, reciprocity and communicative actions do not, in the classical view, have any relevance for the success or effectiveness of communication. In the classical model the process of communication and of information are not acknowledged as reciprocal interactions in which the meaning of the information has, first and foremost, to be developed. In the classical model of communication, the receiver is an empty box.

Let us summarize both the classical and reflexive models of communication here: models of classical communication focus on the causality, transitivity, and measurement of information being transmitted from a sender to a receiver. A one-dimensional relationship of sender and receiver are at the centre of attention because the sender merely transfers given information and, hence, a given meaning to the receiver. In contrast to that, the reflexive model of communication emphasizes the dynamic use of language, that is, it recognizes the non-neutrality of language as an active component in the evolution of social reality. The principle of reciprocity goes beyond the sender-receiver issue because it draws attention to the situation and the context of the communicative interactions. The reciprocity approach is based on reflexivity and the unavoidable selectivity of perception, both in the recipient of a communication and, indeed, even in the sender of the message regarding its receipt and interpretation by the recipient. It focuses on non-measurable elements such as persuasion, expectations, interpretation, and action, including non-verbal responses and counter-responses. Communicative interaction is based on the understanding of language as an instrument of thought, that is, not of language as neutral vis-à-vis thoughts. Language is not the materialized content of a neuron in the biological speech centre of the brain. Language is a medium for recognizing the world and to shape, conceptualize, translate, encapsulate, and systematize experience and knowledge. Communicative interaction and

language, as Austin and Searle emphasized, are the results of different conceptualizations, but are not the equivalents of things, properties, or objects. Language and communication, as well as information, are constructions and, therefore, conceptualizations of social phenomena.

To summarize the previous paragraphs: The conceptual framework of communicative interaction is not compatible with approaches devoted to mechanical analogies and deductive reasoning. The conceptual framework I have introduced excludes theoretical views of communication such as mathematical or linear theories (Shannon and Weaver 1949), quantitative theories (Schegloff 1993), or marketing approaches. This conceptual framework is aimed at describing the interdependencies of three dimensions – information, interaction, and context – by focusing on communicative interactions. It provides a framework of reasoning for central bank interactions and communication with agents of the financial market.

3
Central Banking and Communication As a Function of Circumstance

> Central banks generally appear to have embraced a common model of the channel through which monetary policy functions, although the specifics and emphasis given to those channels vary according to our particular circumstances. All banks ease when economic conditions ease and tighten when economic conditions tighten, even if in differing degrees, regardless of whether they are guided by formal or informal inflation targets.
>
> Greenspan 2004, 39

This chapter draws attention to the reasons why central banking needed to refer to circumstances. Circumstances draw our attention to the importance of linking a view based on models to the context and circumstances. The so-called *embraced common model* in fact reflects the new wisdom of central banking, since it relies on observation and recognition of changing circumstances. There are at least two main branches wherein the term circumstance can be referred to. Circumstance can be defined with respect to the different monetary policy regimes to which a central bank is committed, and to the mandate. A commitment to a mandate also implies that a central bank acts as an institution.

Central banks are not additional factors of an already given social environment: as was explained in Section 2.1, through reference to the interdependence of social structures and acting, central banks are not simply 'implemented' by their mandate. Central banking is aiming *at reaching its mandate, that is, central banking is a process*. Consequently the communication strategy of a central bank needs to be applied to both

its monetary policy regime and its mandate. This is also true regarding its reputation and credibility. There are also warnings in the literature to keep in mind the goal of a central bank. Consider the following comment by Issing (2005a, 68):

> Any discussion on the communication and transparency of monetary policy that starts off in abstract terms and in isolation of the actual task of a central bank is bound to lead to misunderstandings. Transparency is not an end in itself: a central bank is not established with the primary objective of communicating with the public. Its mandate either stems directly from the monetary system, as was the case with the gold standard, or is specified by the legislator, which became necessary in times of the paper standard.

Issing's reference here to the monetary policy regime and the mandate of the central bank indicates the importance to a central bank's environment and its action of the reliance on communication. In the literature, particular monetary policy regimes have been differentiated and widely accepted as basic frameworks to move in for making further distinction – inflation target, monetary target, and exchange rate target, including different kinds of fixed exchange rate regimes or currency boards (Mishkin 1999). Broadly speaking, a central bank can adapt to an inflation target with or without a numeric specified goal, a monetary target, or an exchange rate target (Mishkin and Schmidt-Hebbel 2001; Shu Lin 2007; Schmidt-Hebbel and Walsh 2009). Some authors argue the monetary policy regime of the Federal Reserve functions as an implicit nominal target. Other authors object to the proposal that the Federal Reserve should adapt inflation targets (Greenspan 2002; Friedman 2004).

Regarding these roughly sketched concepts of monetary policy regimes, one has to ask what kind of consequences can be discussed regarding their communication policy. Blinder and Goodhart et al. (2001, 10) described the choices for central bank communication as being based on simple or complex rule-based monetary policy regimes as opposed to discretion. Simple rule-based regimes are, for example, currency boards and fixed exchange rates, whereas exchange rate peg and crawling peg regimes are examples of less rigid rule-based systems. Contrary to that distinction, a wide-range inflation targeting central bank is a more complex discretionary monetary policy rule. Both simple and rigid rules are supposedly driven automatically and, hence, do not need support by communication, whereas complex discretionary regimes need more communication efforts on the part of the central bank.

This linkage between the monetary policy regime and the classification of various approaches above provides an interesting picture of the place given to central bank communication literature at that time. It should be clear that Blinder and Goodhart's et al. reference to this traditional 'rule versus discretion' approach is to be understood as a first step in linking monetary policy to communication and central bank talk in order to expand upon the traditional view of central banking. This traditional distinction has been configured by the community of science and has dominated debate on monetary policy and decision-making procedure since the 1970s. The dichotomy of 'rules versus discretion' was conceptually a simplified view on the decision-making process of a central bank. This dichotomy was abstracted from context and circumstances, from historical knowledge and from the interaction of structures and actions, hence from about how rules have been developed and how it has been achieving acceptability. This concept of 'rules versus discretion' was due to a model view, constructed for the sake of formal, hence deductive, results. It conforms to formal appropriateness (Muchlinski 2003b, 2003c). Criticisms were made by Cukierman (2002), Ferguson (1999), Issing (1996), King (1997), and McCallum (1997, 1999), among others; for example, James Tobin (1983, 508) stated, 'simplicity gives them their political appeal and power'.

These criticisms, which are mainly expressed by central bankers and central bank literature, addressed the simplified approach to the central bank decision-making process as unacceptable.[1] It is clear that a model does not fit reality because the task of modelling is to evaluate different kinds of interrelations to certain well-defined premises and conclusions incorporated by the particularities of the model view. A model view is anchored to premises and conclusions. A model view encapsulates a logical progression which can be outlined according to a variety of changes regarding the parameters of the model and resulting in various logical conclusions. From my point of view, I find it important that these criticisms seem to slightly redirect economic modelling towards a model perspective which can be linked to economic circumstances and context. Although it is not possible to apply a model perspective 'to' a reality perspective, even with a so-called model projection method or rules of projections, in economics it is nevertheless the task of a model that it must appropriately explain changing patterns of behaviour in changing circumstances or a 'lifeworld'. As was argued in Chapter 2, these patterns are configured by the interdependence of structures and actions. The benefits of the use of modelling in social science are not in delivering formally designed methods of deductive reasoning addressed

to invariant or variant parameters ruled out by mechanical reflexes. Central bankers should work with models which possess explications of central banking in changing environments (see Blinder and Yellen 2001; Ehrmann and Fratzscher 2008).

The Volcker era could be reread as an example of an inadequate formal approach because the 'k-percent-rule' or 'money growth-targeting' ignores the circumstances of the institutional interactions between the central bank and commercial banks regarding the concepts of money, the innovation of fiat money, of money demand and supply in the economy. This 'k-percent-rule' and 'money growth-targeting' could not have been implemented. Earlier a comment by Goodhart (1994) and Vickers (1998) regarding the Bank of England was mentioned (see Section 1.2). I will turn to another example in this chapter, the Greenspan era.

Clarida, Gali and Gerler (2000), and Goodhart (2001b), among others, proposed improving the theoretical concept of 'rules versus discretion' by emphasizing that 'rules' also imply discretionary manoeuvres in the decision-making process of a central bank. As I will outline in Chapter 5, the concept of 'rule' applied in social science does not work as a mechanical analogy (Muchlinski 2003b, 2003c).

Bernanke (2004, 2) referred to distinct concepts he described as *simple feedback policies* and *forecast-based policies*.[2] He explicitly rejected arguing on the basis of the traditional view. He also objected to modification of it into 'instrument rules' and 'targeting rules', as proposed by Svensson (2003). Bernanke stated that he sought to explain his view on the basis of distinct concepts which do not evoke any terminological association with previous debates. Bernanke (2004, 2) made a 'gestalt-switch' towards new categories in central bank literature by arguing:

> Unfortunately, for my purpose at least, this (traditional, EM) terminology is somewhat misleading. First, the term 'rule' suggests a rigid and mechanistic policy prescription that leaves no room for discretion or judgment. ... Today most monetary economists use the term 'rule' more loosely to describe a general policy strategy, one that may include substantial scope for policymaker discretion and judgment. Here I will use the term 'policy' instead of 'rule' to avoid the connotations of the latter. Second, the terms 'instrument' and 'targeting' are products of the intellectual history of the debate and, to my mind, are not particularly descriptive. I will refer to the approaches known in the literature as instrument rules and targeting rules instead as *simple feedback policies* and *forecast-based policies*, respectively.

He emphasized that *simple feedback policy* implies a high degree of ignorance of the structure and activity in the economy. However, *simple* in this context means that agents in the market know that the central bank itself acknowledges only a few indicators and variables, which have been used to model decision-making and expectation-building according to the robustness of results in econometric tests. It is comparable with Taylor's approach to monetary policy (1993, 1999), specified in a simple and robust model.[3] It can be interpreted as a policy relating to a short time projection which is understood immediately and needs no further explications or communications.

In contrast, the *forecast-based-policy* implies a continuous procedure of economic judgments and evaluation. It is related to a mid-term projection of about six to eight quarters. Regarding the interaction between a central bank and agents in the market Bernanke (2004, 5) explained: 'Under *forecast-based approach* ... judgment or special information should affect policy choice to the extent that it affects the forecast or the risks to the forecast.' A particular feature is that the central bank opens up its transparency and communication to the judgments of experts in order to aim at an agreement on the prospective performance of the economy with the market participants. In contrast to the *simple feedback policy,* the *forecast-based policy* refers to a comprehensive set of economic variables which should be explained and communicated to the politicians and the public.

According to Bernanke (2004, 8), communication has become an elementary function in clarifying the Fed's information policy.

> As a general matter, the more guidance the central bank can provide the public about how policy is likely to evolve (or about the principles on which policy decisions will be based), the greater the chance that market participants will make appropriate inferences – ant thus the greater the probability that long-term interest rates will move in a manner consistent with the outlook and objectives of the monetary policy committee.

He emphasized that *simple feedback policy* and *forecast-based policy* are not equally used sources in the decision-making process; the *forecast-based policy* has becoming more important to most of the central banks. To sum up this pattern of judgment, the *forecast-based policy* provides an appropriate link to changing circumstances and the context of a central bank (see Bernanke 2004, 5). Although the Federal Reserve does not base its monetary policy on published forecasts, the *forecast-based*

policy indicates the importance of the interrelated structure of economic variables.

Bernanke gravitated towards new concepts in order to configure the debate on the methods of decision-making and monetary policy, steering it in a new direction. He avoided being captured in a cognitive straitjacket based on a misleading analogy arising out of traditional concepts. Recognizing both policies as sketched above, one might ask how appropriate the *simple feedback policy* is in the purpose of steering market expectations and getting the long-term interest rate to a level which is needed in order to implement the central bank's mandate. In other words, which methods are needed for 'getting the markets in synch with monetary politics'? (see Chortareas, Stasagave and Sterne 2002; Cukierman 2002; Walsh 2002). Also, communication seems to function more as a medium to transmit and explain information given by the Fed.

If we interpret *the simple feedback* policy as a code or rigidly fixed rule, then this policy should be seen as inadequate to monetary policy and its task of steering the market expectations of a heterogeneous group of agents in financial markets. However, if we instead understand it as heuristic thinking or as 'the recognition heuristic' introduced by Goldstein and Gigerenzer, it needs to be connected to the 'ecological environment' (ibid) and circumstances. The assumption underlying the effect of the *simple feedback policy* is that agents in the market are accustomed to diversifying their attention. They are inclined to pay attention to experienced 'rules of thumb' as the experiments of Goldstein and Gigerenzer documented. The agents are in the habit of focusing on information that resembles the acquired knowledge base. However, this cognitive anchoring does not imply that the agent's expectations are past driven or mental states which should be conveyed by language, but rather that they do not act as billiard balls bouncing around without history, experiences, and social circumstances.

A *simple feedback policy* can only be interpreted as a primary step in anchoring the inflation expectations, which then needs to be supplemented by the *forecast-based approach*. In my view this is of great importance to the dominant *forecast-based approach* to monetary policy and the forward-looking behaviour of the agents.

The crucial aspect of market interactions is that the private sector has to estimate the future level of prices and short-term and long-term interest rates in money markets given the historical path of their movements and the dependency of the path of the central bank's decision-making process. The forecasting models of the private sector encompass

coefficients concerning macroeconomic variables which need to be constantly reassessed (Orphanides and Williams 2005). According to the current controversies in the literature, it has been argued that market expectations need to be anchored in a commitment by the central bank (Woodford 2005; Orphanides and Williams 2005). It is not the given level of short-term interest rates that is important, but the expectations of the markets participants regarding the long-term interest rates and, hence, the future level of the short-term rates.

However, does a credible commitment – a 'sound policy' – by the central bank regarding its future path of inflation allow the private agents to stabilize their expectations? Would it minimize the uncertainty in the markets? There is no consensus in the literature on this matter (Greenspan 2002, 2004; Blinder and Reis 2005; Kohn and Sack 2003; Issing 2008). As Bernanke explained, actions and interactions in the financial markets are also driven by expectations which are impregnated by the history of the concepts and categories. The crucial point is that any kind of commitment by a central bank on the future path of price development and interest rate levels needs to be anchored in changing circumstances and contexts in order to be understood as 'a sound policy'. As has been stated, communicative interaction is not a linear process, and information is not 'given' by the sender, but rather through information processing based on the possibility of understanding.

The demand for a commitment is rooted in the abandonment of the traditional view because of its inadequacy in central banking practice. Given the traditional model view composed on the rational expectations hypothesis (REH), no stabilization is needed because the hypothesis works as a stabilizing parameter of the model itself. Based on the 'common knowledge' assumption, the REH implies perfect information, perfect knowledge, and perfect understanding. The demand to stabilize inflation expectations via a central bank's commitment seems to have the function of substituting the model premise of REH with another. However, given this model view, no differing result will be possible. The claim that agents in the market need a central bank's commitment is not convincing because it does not guarantee better understanding, since it is further information which has to be perceived regarding changing circumstances. More information does not automatically lead to a better understanding. A commitment by the central bank could lead to a test by the market in order to prove whether this commitment is credible or not.

At this point the *forecast-based policy* as explained by Bernanke indicates that the Federal Reserve should try to improve the communicative

interaction with the markets. I subscribe to the view that it is necessary to focus on the understanding. In the case of the Federal Reserve Bank there has been a strong demand on the agenda to specify its mandate of 'price stability' as a numerical goal in order to concretize context and circumstances. It was argued that the Fed follows a 'Just-Do-It-Strategy' because it has not yet adapted inflation targeting. The monetary policy regime was then described as 'Inflation-Targeting with an implicit nominal anchor' (Mishkin 1999; Goodfriend 2005), whereas Greenspan (2002) and Kohn (2005b) objected to the demand and also to the above description.

One consequence of the above debate is that the communication skills and efforts of the Federal Reserve Bank needed to be improved – a goal Chairman Greenspan had exercised intensively. I will turn to it shortly. However, Bernanke (2004a) made the point that *times are changing* and the postulate 'never explain, never excuse' does not fit the modern view of central banking.[4] Greenspan (2004, 37) introduced the *forecast-based policy* as the new 'risk-management approach to monetary policy', as an approach to problem solving and as an alternative in optimizing a strategy that, 'emphasizes understanding as much as possible the many resources of risk and uncertainty that policymakers face, quantifying those risks when possible, and assessing the costs associated with each of the risks.'

Greenspan described his work at the Federal Reserve as an 'epistemology', as a science of identifying what is known or unknown or known and unknown for whatever reasons. A remarkable feature of his speeches, for example, is that they were concerned with a broad range of topics describing that landscape.

The 'risk-management approach to monetary policy' was summarized and concretized by Blinder and Reis (2005). The 'risk-management approach to monetary policy' explicitly moves beyond the pure model view on central banking by integrating different risk categories (macroeconomics and microeconomics), different levels of risk (moderate, high, low), and descriptions about the management quality (strong plus lag, weak plus lag, or acceptable lag).

It is based on key considerations that monetary policy should act by gradual degrees and avoid abrupt activity. To be more precise, the 'risk-management approach' is composed of key principles – such as a) 'fine tuning', for example, 'conservatism' regarding the fundamental uncertainty surrounding central banking; b) 'interest rate smoothing'; c) 'reversal aversion'; and d) 'preemptive decisions' – in order to acknowledge changes in the structures and to be able to implement actions right on time.

The principles of 'fine tuning' and 'interest rate smoothing' are to be seen as steps towards soft changes in the level of the nominal short-interest rate according to the specific asymmetry of times which affects long-term interest rates and inflation expectations. Greenspan emphasized that the Federal Reserve should act conservatively and not move suddenly or impulsively to change the direction of the market expectations. What does uncertainty mean? Greenspan (2004, 36–37) clarified this:

> The term uncertainty is meant here to encompass both 'Knightian uncertainty', in which the probability distribution of outcomes is unknown, and 'risk', in which uncertainty of outcomes is delimited by a known probability distribution. In practice, one is never quite sure what type of uncertainty one is dealing with in real time, and it may be best to think of a continuum ranging from well-defined risks to the truly unknown.

The Federal Reserve was tightening nominal interest step by step. However, as the experience of the Federal Reserve in the 1990s showed, inflation contributed to the price bubble. This occurrence cannot be explained by the adequacy of the Taylor rule, but rather by further attempts to understand the changing environment (see McCallum 2000, 2000a). At the time of making a particular decision, however, changes in the environment may not be perceivable as a hard fact, as an index, or as a number.

The principles of 'reversal aversion' and 'preemptive decisions' are identified as being a way of acting soundly to acknowledge changes of structure. For a central bank, changes of nominal interest rates are always important signals to the market. This is also true if a central bank announces a correction of its interest rate decisions once it has made a decision publicly. A spontaneous correction will affect its reputation and credibility regarding further decisions. However, no central bank wants to be accused of being 'behind the curve'. Greenspan does not offer a 'magic formula' but he offers certain considerations regarding the 'risk-management approach' described above. Blinder and Reis (2005, 82–86) concluded as follows:

1) 'Keep your eyes open'. Monetary policy does not work as a rigidly fixed rule. Step beyond old fashioned concepts like 'rules versus discretion'.
2) 'Don't let yourself get caught in an intellectual straitjacket'. There exist many concepts in macroeconomics like NAIRU,

REH, PHILLIPS-Curve, which have been playing a role as selective approaches to economic optimization rather than economic circumstances and problem solving.

3) 'Avoid policy reversal'. Economic procedures are not linear procedures and almost none have reversible traits.
4) 'Forecasts, though necessary, are unreliable'. Forecasts need to be linked to the contemporary world.
5) 'Formal optimization procedures work in theory, but risk management works better in practice – especially as a safeguard against very adverse outcomes'. Acting in practice and circumstances is preferable to optimization.
6) 'Recessions are bad, as is growth below potential'. The Federal Reserve's 'Dual Mandate' is an adequate response to ups and downs in the economy.
7) 'Most oil shocks should not cause recessions'. A modification of the definition of inflation or core-inflation will show a way out of recession.
8) 'Don't try to burst bubbles; mop up after'. Greenspan argued in favor of a 'mop up after' strategy because a central bank's mandate is price stability and not intervention in the procedures of the markets. Additionally it should be acknowledged that a central bank cannot have a pretense of clarity about the limits of a bubble.
9) 'The short term real interest rate, relative to its neutral value, is a viable and sensible indicator of the stance of monetary policy'. Although the Federal Reserve sets the nominal interest rate, the Federal Reserve funds rate, it nevertheless aims for a certain level of the real rate.
10) Blinder and Reis (2005) demanded a transformation of the dictum of Teddy Roosevelt, who stated, 'talk softly, but carry a big stick', into 'talk modestly, but set your sights high' (ibid).

The above summary also underlines the notion that the Greenspan era has influenced the theoretical debates on central banking.

My own thoughts on this are that the importance of the circumstances and context regarding the evolution of the meaning and understanding can no longer be neglected, because it keeps the central bank fulfilling its mandate and ensuring the effectiveness of monetary policy. This can be shown by reference to Greenspan. In the literature the 'Greenspan era' is described as a successful one, although it cannot be described as a 'Greenspan rule' or 'Greenspan model' (Blinder and Reis

2005). However, the label 'Greenspan model' misses the point regarding his way of acting and communicating (Sicilia and Cruikshank 2000). Nevertheless, the absence of any particular rule or method was essential to his success. Greenspan's announcements show, in my view, that he avoided use of a coded language while interacting with the markets.

Greenspan described the context in which the central bank is embedded by referring to three particular features:

a) The political acceptability of price stability a central bank is aiming for. The background of this acceptability is without a doubt rooted in the negative consequences of the monetarist experiment regarding the tight money policy and depression around the globe.
b) The challenges of the globalization process which definitely changes the competitiveness in global financial markets.
c) The new technologies which set high and completely new standards for the traditional concept underlying the monetary policy, for instance, the price index.

Any judgment about monetary policy is also connected with the context and circumstances:

> We were fortunate ... to have worked in a particularly favorable structural and political environment. But we trust that monetary policy has meaningfully contributed to the impressive performance of our economy in recent decades. (Greenspan 2004, 40)

The decision-making procedure of the Federal Reserve is framed by different models, rules, and models of forecasts which have to link to the context and environment. The judgment about changing phenomena in the context requires first of all the willingness to notice changing aspects of that landscape. Secondly, it requires one to revaluate and reinterpret the observations, concepts, and instruments by inductive reasoning. Evaluations of uncertainty and changing circumstances are not possible through reliance on deductive reasoning, since in deductive reasoning there is no uncertainty allowed for at all. Deductive reasoning draws its conclusions from premises and axioms, that is, a model. The necessity of judgment in light of uncertainty (or as Greenspan specified in a reference to Knight, when one is confronted with different or unknown types of uncertainty) means needing to step beyond the certainty of the deductive reasoning of the model world. Another consideration should be recognized: deductive reasoning implies truth or rightness in a logical

form based on logical language and syntax. Additionally, reliance upon a numerical target of price stability would not reduce the uncertainty. Uncertainty of the concrete situation and the unknown future frame the decision-making procedure in the concrete situation:

> Even monetary policy rules that use recent economic outcomes or money supply growth rates presuppose that the underlying historical structure from which the rules are derived will remain unchanged in the future. But such a forecast is as uncertain as any. (Greenspan 2000, 2)

Therefore central banking is inevitably concerned with the requirement to act regardless of the uncertain situation. There is no way to escape it, but it is possible to step beyond the supposed certainty of deductive reasoning:

> We must confront the fact that only a limited number of risks can be quantified with any confidence. And even these risks are generally quantifiable only if we accept the assumption that the future will, at least in some important respects, resemble the past. (Greenspan 2004, 38)

Keynes (1921) would have supported Greenspan's view:

> I have argued that only in a strictly limited class of cases are degrees of probability numerically measurable. It follows from this that the mathematical expectations of goods or advantages are not always numerically measurable. ... If, therefore, the question of right action is under all circumstances a determinate problem, it must be in virtue of an intuitive judgment directed to the situation as a whole, and not in virtue of an arithmetical deduction derived from a series of separate judgments directed to the individual alternatives each treated in isolation. (Keynes, *Collected Writings* Vol. VIII, 345)

By referring to the bubble phenomenon in the 1990s, Greenspan described that at every stage the Federal Reserve was faced with perceptions, facts, and events which none of the members of the Federal Reserve had previously encountered, and which could not be explained by any of the prevailing models, concepts, or categories.

The uncertainty which surrounds central bank action and decision-making process are persistent, and exist at all times. For instance, the

Federal Reserve cannot fulfil its mandate by referring to a price index only. The numerical concept of price stability does not encapsulate the evidence of moving prices throughout all branches of the economy and times. Therefore, one has to ask: what generates a stable price index? The answer is still open to debate. Greenspan (2002, 5-6) argued:

> By price stability, however, I do not refer to a single number as measured by a particular price index. In fact, it has become increasingly difficult to pin down the notion of what constitutes a stable general price level.

That technology-driven price movement requires changing the instruments and modes of perception as well as the concepts to describe new phenomena. The economy is not a mass of invariant entities which are calculable separately and, hence, measurable. The price movements of the so-called traditional industries are calculable numbers. This could not be said regarding the definition of the prices of new technologies in medicine or computer technology. Uncertainty, as the defining characteristic of the central bank landscape, also encompasses these conceptual uncertainties and, hence, problems of measurement:

> But in our new century, the simple notion of price has turned decidedly ambiguous. What is the price of a unit of software or a legal opinion? How does one evaluate change in the price of a cataract operation over a ten-year period when the nature of the procedure and its impact on the patient has changed so radically? Indeed, how will we measure inflation, and the associated financial and real implications, in the twenty-first century when our data – using current techniques – could become increasingly less adequate for tracing price trends over time? (ibid)

At this point, Greenspan repeated his objection to implementing a numerically specified inflation target for the Federal Reserve:

> For all these conceptual uncertainties and measurement problems, a specific numerical inflation target would represent an unhelpful and false precision. (Greenspan 2002, 6)

Bernanke argued that a specification of an explicit monetary policy rule would not fit changing circumstances. 'The problem is that the number of contingencies to which policy might respond is effectively

infinite (and indeed, many are unforeseeable)' (2004, 6). In his speech 'Fedspeak', he drew attention to further empirical findings which have emphasized that central bank statements matter to its policy effectiveness. Communication enlightens and explains the way a central bank works and allows the public to effectively share. Remarkably and evidently, communication has also improved the long-horizon forecasting ability of monetary policy decisions by the private sector. Bernanke (2004, 6) stated:

> With respect to actions, the central bank should behave in as systematic and as understandable a way as possible, given the macroeconomic and financial environment. That is, although monetary policy cannot be made by a mechanical rule, policy can and should behave 'rule-like' features. ... However, because the world is complex and ever changing, policy actions alone, without explanation, will never be enough to provide the public with the information it needs to predict policy actions. Words are also necessary.

According to the above citation, 'words' seem to have the role of enlightening the meaning embodied in the information given from the central bank (sender) to the public (listener). However, whereas Bernanke voted for a 'rule like' monetary policy which put the central bank itself into a certain direction of future policy and, therefore, commitment, Greenspan modified the function of a rule-like policy by stating that the meaning and understanding is not achievable by deductive arguments only. Greenspan has also written,

> I believe we at the Federal Reserve, to our credit, did gradually come to recognize the structural economic changes that we were living through and accordingly altered our understanding of the key parameters of the economic system and our policy stance. The central banks of other industrialized countries have grappled with many of the same issues. (Greenspan 2004, 33)

The perception of changing times, that is, of changing observations – and changing key parameters of the economic system – and the endeavour to improve concepts, methods and instruments provide the basis for understanding and meaning. Meaning and understanding are rooted in the use of language, in practice. Greenspan did not use a coded language. A coded language cannot be used in the context of changing practice. A coded language may be suitable to drive a car or to

the use of a machine. The communicative interaction, that is, the use of language, is embedded in the circumstances, context, and history. The meaning of a sentence is encapsulated in the historical situation and cannot evolve isolated from the context which is, of course*, a changing one*. Changing circumstances and contexts as well as changing times need to improve the understanding of the context and language and expressions used. Any language-game is a result of a common course of action. This common course of action provides 'the system of reference by means' for the communicative interaction as words need to be anchored in their context (Wittgenstein 1978 § 206).

A central bank possesses a huge amount of experience, knowledge, and capability to act, to shape, and to influence the social context the central bank is also part of. A central bank's motivation to act, shape, and influence its environment and context is primarily due to its mandate. However, the central bank's path to fulfilling its mandate is a never ending learning process. At this point the reliance upon a coded language would enhance the uncertainty for reasons I am going to state more precisely in Chapter 5. The role of learning in central bank experience has been emphasized by Greenspan (2002, 2):

> Although we have learned much about managing the financial backdrop to accelerating economic activity, it is essential that we not be deluded into believing that we have somehow discovered the Rosetta stone of monetary policy. A failure by policymakers to sufficiently appreciate the inevitable uncertainties that they confront could result in unfortunate consequences for the economy. While we central bankers do not have full knowledge, we have continued to gain insight – albeit slowly – into how market economies function. That learning process has been aided, especially in the United States, by a vast panoply of data and information from both public and private sources. However imprecise, these readings on the economy have helped us steer monetary policy through an inevitable uncertain future.

Greenspan (ibid) emphasized that the move on this road is not a lonely walk on an island, but an interactive procedure.

> In practice, it is the joining of ideas and data that drives policy in the face of uncertainty. We seek to array the probabilities of future policy outcomes, attempt to gauge the costs of being wrong in our decisions, and endeavor to choose the policy paths that appear to offer greater benefits and fewer risks.

Regarding the uncertainty surrounding the central bank's actions and decisions, Greenspan and the FOMC chose a discretionary policy because it is not possible to define economic parameters as precisely as would be needed to guide a rule-based monetary policy. Reference can be made again here to the classification by Blinder and Goodhart et al. (2001) introduced at the beginning of this chapter. The example of the so-called monetarist experiment throws a clear light upon that problem. The effect of uncertainty surrounding the central bank's practice is described by Greenspan (2001b) as follows:

> Faced with this inevitable uncertainty, a central bank's vigilance against inflation is more than a monetary policy cliché, it is, of course, the way we fulfill our ultimate mandate to promote maximum sustainable growth. ... Monetary policy, as we currently practice it, endeavours to lean the propensities for economic overshooting, from whatever source, by changing interest rate. But we are unlikely ever to be entirely successful. For example, it is not possible to foresee how far risk premiums will fall or when that decline will adversely alter psychology.

Therefore, the changing environments in which the central bank is embedded also implies the requirement of changing responses and strategic actions:

> With the virtually unprecedented surge in innovation that we have experienced over the most recent half decade, many of the economic relationships embodied in past models no longer project outcomes that mirror the newer realities. (ibid)

Although the economic commentator, Forbes, has asserted that Greenspan has guided the financial markets by 'his Delphic, ambiguous, often impenetrable prose' (*The Wall Street Journal*, February 1, 2006), I would rather interpret it as a way of acting or of communicative interaction. Greenspan described or reported on the decisions, the inclinations, and views of the Federal Reserve Bank through the use of everyday language, that is, the language in context. He avoided the pretension accompanied by the use of a coded language and, hence, the deceptive appearance of acting in a realm of certainty. He guided the communicative interactions, that is, the expectation-building process among the agents in the financial market by use of everyday language.

In Chapter 1 it was shown that the traditional assumption about central banks neglects matters which are in fact important for the

fulfilment of their mandate. Not just the concept of credibility, but also the concept of transparency, are based on economic interaction and linguistic communicative actions. Both refer to the mode of action, that is, 'matching deeds to words'. There is no hidden agenda which allows an independent central bank to implement the effectiveness of monetary policy as if driving on a one-way-road (Freedman 2003). The central bank being located and constituted within social structures acts as an institution in the social world and not the physical world. Therefore, its verbal and non-verbal interactions are not based on natural laws or rules, but on the continued evolution of compositional rules concerning the construction of utterances, institutional arrangements, actions and facts. Acting within a societal framework also implies reactions and responses. It is important to emphasize that central banks contribute to the structures of the societies of which they are part. The credibility of the Federal Reserve has been gained by the employment of flexible responses in accordance with changing contexts and changing perceptions of the economy as a whole. The concepts of monetary policy-derived actions referring to mechanical procedures of adaptation should in that sense be relegated to the past.

I now turn to a basic investigation carried out by Kohn and Sack (2003) which provides a *striking* example of how a central bank's communication interaction with the financial market has been considered. This was pioneering work on the Federal Reserve Bank's communicative interaction. Many other comparable studies have followed since.[5] Valuable research on the measurement of the European Central Bank's communication has also been carried out, but will not be presented here. Research in the literature on central banking has been beginning to measure the effects of communication in the financial markets. Ehrmann and Fratzscher provided the pioneering work and the communication strategies of both the European Central Bank and the Federal Reserve Bank. Their empirical findings support the view that communication is *the heart of central bank transparency and accountability*.[6]

Empirical investigations document that the speeches, testimonies, and FOMC meetings matter (Kohn and Sack 2003). However, private information is a certain factor in how the Fed's announcement affects the markets (Morris and Shin 2002). Nevertheless, it has been emphasized that

> the nature of the information being transmitted remains unclear. A communication about the information that relates to the insights of future policy decisions or the state of the economy – is distinguished

> form a communication that serves to coordinate the actions of private agents operating with imperfect public common knowledge. (Chirinko and Curran 2006)

The problem of central bank communication is first at all to measure how markets incorporate information. If a central bank's statements, or 'talk', do have any effect on the expectation-building process, this can only be estimated empirically.

Kohn and Sack (2003, 2) expressed the issue as follows:

> This work is a first step in a research program to provide central banks with useful evidence on what kinds of 'talk' are most successful for realizing the potential benefits of transparency. ... Lastly, our results speak to the issue of whether central banks can 'talk down' (or 'talk up') particular asset prices that they feel may be incorrectly valued.

Since limited knowledge and uncertainty surround every decision, it is hardly possible to answer the question of how, when, and in which manner statements of the FOMC, and testimonies and speeches of the chair of the Federal Reserve, have the function and effect of shaping the expectations of private agents. Current empirical studies shed light on these questions (Bernanke, Reinhart and Sack 2004; Kohn 2005).

Kohn and Sachs (2003) investigated *how* and *if* statements by the Federal Reserve Open Market Committee, as well as testimonies and speeches by the chairman, are able to significantly affect economic variables. Their claim is that only empirical investigation can provide an answer to this question. Based on a contribution by Freedman (2002), the authors differentiate three types of communication: a) the FOMC statements (so-called 'risk bias' or 'balance of risk assessment') which are released to the public immediately after the meeting of the FOMC, b) the testimony by Chairman Greenspan, and c) the speeches by the chairman. They then try to measure the effects of these three types of communication on the transparency of the Federal Reserve and the public's understanding.

The underlying questions are: Is there a link between the 'new language' strategy the FOMC started in January 2000 and the effectiveness of monetary policy? Are there significant effects on the movements of the short-term or long-term interest rates? Have these three types of communication been improving the transparency of the Federal Reserve? Is there any remarkable effect to be mentioned

regarding the aim of the Federal Reserve sharing the expectations of market participants? Does central bank talk matter at all? Economic variables, particularly the Treasury forward rate and interest rates, are driven more by words than by deeds: 'In this regard, statements appear to be an important component of the policy implemented by the FOMC' (Kohn and Sack 2003, 11).

The testimonies of the chairman to Congress have a still greater effect on the economic variables in question, that is, 'Federal Reserve funds rate, Eurodollar future rates, the two-year Treasury yield, and Treasury forward rates' (ibid, 2003, 12). The authors argue that the FOMC statements often contain the same information, but its disclosure does not lead to such a significant effect on the near-term interest rates as does the chairman's testimony.

What is the difference between these two types of communication? Before addressing this question, let us first move on to the third type of communication. Compared to the FOMC statements and the testimony of the chairman, the third type of communication, the speeches of the chairman, evidently do not have a remarkable effect on the movements of economic variables at all. The reasons are presumably to be found in the broad range of topics regularly discussed by the chairman. The speeches of Greenspan dealt with many issues, including those which are not concerned in a narrow sense with monetary policy strategy.[7] Nevertheless, it is reasonable to suppose that the effects of these speeches are embedded in the Federal Reserve's function of providing a pattern of prospective roots for monetary policy strategy – a prospective view which is important to the expectations of market participants. Although the authors deny any systematic link between the speeches of Greenspan and the reactions of market variables – that is, changes in the decisions and reactions of market participants resulting from his speeches – they do not argue that the speeches are without any relevance. The empirical evidence shows they are less significant to the market variables than are the two other types of communication. Kohn and Sachs (2003, 11) stated:

> Judging from the effects of his testimonies, we believe that speeches that address the current or prospective economic environment are likely to generate a significant market response. Our approach probably includes enough instances in which he did not address those topics to obscure the effects of speeches that did.

Regarding these three types of communication, central bank communication does matter, but why? Kohn and Sachs emphasize the

important role of expectations for economic development. A central bank cannot be successful by trying to avoid having an influence or fooling market agents or market expectations. Without doubt, the market has an interest in listening to the views of the chairman. A lack of transparency would impede the effectiveness of monetary policy and restrict its ability to fight monetary shocks.

However, I briefly turn now to central banks as institutions just in order to add the considerations above. There is no space and time to get into the details of the literature and research on monetary institutions and path-dependency of institutions or organizational path dependence (see Sydow, Schreyögg and Koch 2009). Central banks do not communicate as individuals to the market regardless of whether the chairman speaks in a press conference; they communicate as institutions. The central bank's need to focus on special information and to investigate certain economic developments – that is, the monetary transmission process which differs greatly between countries, or prices of goods markets, currencies, the rate of economic growth, and so forth – and furthermore to create and communicate certain data according to an economic environment, describes clearly its role as a monetary institution. As monetary institutions, they have comparable monetary strategies in order to secure the effectiveness of monetary policy. Institutions – their rules, structures, services – are institutional facts. Institutional facts are not 'brute facts' (Anscombe 1958). As social phenomena they are not independent of the perception, acknowledgement, and utility of the people involved. In light of the social science paradigm, social phenomena or institutional facts are created facts; they are based on language activity (Brandom 2006). One certain feature of institutional facts – like a central bank or a university – is that 'they are placeholder for pattern of activity'. They earn their acceptability by their ongoing activity. A certain characteristic of institutional facts is that they are not worn out or exhausted by its continuity:

> At this point, I am just calling attention to a peculiar logical feature that distinguishes social concepts from such natural concepts as 'mountain' or 'molecule'. Something can be a mountain even if no one believes it is a mountain. ... But for social facts, the attitude that we take toward the phenomenon is partly constitutive of the phenomenon. (Searle 1995, 34)

'Why and how does the use of language create social facts or institutions?' The answer was given by Searle when he stated that performative

acts play a particular role in the creation of institutional facts because they refer a certain status to an utterance. For instance, if I, as a private individual, say, 'the interest rate will be unchanged', this statement creates a different (presumably no) response than would be the case if the chairman of the Federal Reserve had uttered that sentence. Saying something counts as if one is entering into a contract or commitment (for instance marriage or other agreement or undertaking) – but exactly what depends on the circumstances, social functions, and position or role. For instance, the sentence 'X counts as Y' uttered in a particular circumstance or environment would (or at least could) have a different result from that in another.

Institutional facts can be created by performative acts – or speech acts – when the status-function (Y) can be imposed by declaring it to be imposed – for instance where the term X is itself a speech act. Not all institutional facts are created by speech acts. However economic facts are not like objects – stones, cars, trees – instead, economic science uses language activity to create and shape economic environments. For instance, 'the word money functions as a placeholder for the linguistic articulation for all these practices' (Searle 1995, 52–53). We do not need money to define 'money' because we can refer to different institutional facts, like buying, selling, owing, and so forth. We do not need the word 'money' as long as it is embedded in practices. Similarly, we do not need the word 'language' to define language. Searle (1995, 60) stated:

> If institutional facts require language and language is itself an institution, then it seems language must require language, and we have either infinite regress or circularity.

But such a circularity or infinite regress will not be the case regarding those concepts which are embedded in social practice. Searle (1995, 52–53) concluded:

> We avoided the vicious circularity only by expanding the circle by including other institutional concepts. We are not trying to reduce the concept 'money' to noninstitutional concepts.

To sum up this point with Searle (1995, 57):

> Since the function is imposed on a phenomenon that does not perform that function solely in virtue of its physical construction, but

> in terms of the continued collective intentionality of the users, each use of the institution is a renewed expression of the commitment of the users to the institution. Individual dollar bills wear out. But the institution of paper currency is reinforced by its continual use.

Other findings in the literature also emphasize the structure and political circumstances as favourable or as impediments for a central bank's work. However, the empirical findings have documented that the effects are very different in different countries, and the horizon of interest rate movements in different money markets – regardless of a central bank's monetary policy – is based on an explicit inflation target or monetary target. A seminar organized by the IMF invited speakers from the Asian Region, India, and Latin America to discuss the importance of the central bank communication modes and methods (Enoch 2006, Lambert 2006, Reddy 2006).

The debates over the need for a disclosure policy outline the problems regarding the status and democratic surroundings of a central bank. For instance, the structure of the financial sector in emerging countries is often too sensitive to be discussed in the same way as in the established industrialized countries (Rozkrut, Rybinski, Sztaba and Szwaja 2007). The demand for transparency and communication needs to be treated in a different manner, as the documentation by the Bank of International Settlements clarifies (Simmons 2006). This is partly due to the existing exchange rate targets and partly due to the varied economic and political environment of the central bank in different countries (Burkhard and Fischer 2009; Chiu 2003; Fratzscher 2009).

At this point I would like to summarize this chapter with some further considerations: Concepts and meaning are not givens. The history of the meaning of concepts – like 'rules' in the history of central banking and monetary policy – is the history of the procedure of creating the sense of a 'rule'. The history of concepts inevitably implies the history of the construction of the meaning of concepts. Trying to explain any historical sense and meaning leads to the requirement of explaining the language-based construction of knowledge in and of a society.

No central bank can have knowledge about the decisions and reaction of market participants *ex ante*. Nevertheless it does not start at point zero. It anticipates the perception of market participants regarding their decision-making and actions in the past, and regarding current economic performance. For instance, the 'public's understanding of the monetary process' (Winkler 2000) is observable by the decisions and reactions of market agents. Greenspan made the point that the

price level and wage level indicates what people are doing. The task of the Federal Reserve Bank is to evaluate why people do something specific, that is, to figure out upon what kind of a state of confidence are their decisions and actions based. Therefore, a central bank has to achieve an understanding of the opinions and beliefs of market participants. Since there are no direct interactions between a central bank and market participants, it can only get to this level of knowledge by interpreting market reactions and by perceiving market decisions (order and re-order). From my perspective, the experiences of the Volcker and Greenspan eras have opened the path to a broader theoretical horizon in macroeconomics. The modern view on central banking has a pioneering role for further refinements in macroeconomics by intensifying the interdisciplinary approach. Noteboom (1999) provides convincing examples of how the interdisciplinary approach – including epistemology, philosophy of language, cognitive science and sociology – opens up the understanding on how and why organizations, that is, institutions, behave, learn, and act (Voigt 2009).

4
Economics and Language

This chapter discusses a relatively small range of contributions addressing the combined fields of economics, communications, and language.[1] Language is a constituent for scholarly work in economics. Language is used to build and develop certain research tools, methods, and instruments in different realms of economic science. Despite the focus of this book being on central banking, I would like to shed light on the question of how economists have been working on language. Economists are not used to systematically reflecting on their use of language. This chapter presents an overview of how economic sciences have dealt with communication, and it outlines an example of how central bank modelling has been influenced by the acknowledgement of the constitutive roles played by language and changing contexts, that is, by stepping out of the model view.

4.1 Economics, communications, and language

In social sciences the traditional view of a supposed distinct realm of 'pure data' and 'pure theory' is a thing of the past because the data production itself is acknowledged as theory-laden.[2] Furthermore, the constitutive role language plays in the development of theories and descriptive methods has been accepted. First at all, we should remember that the roots of economics are found in philosophy and, hence, moral science, as underscored, for instance, by Smith in the eighteenth century and Keynes in the twentieth century. Let us be specific with the question: How did economists of the eighteenth and nineteenth centuries discuss the role of language in economic theory? How, for instance, do Smith, Locke, Hume, and Cantillon reflect on language in its constituent role, or on language (Blaug 1980)? How did they use language in order to

build up economic theory and conduct economic research (Mirowski and Cook 1990)? What kinds of symbols, metaphors, or signs were developed, for instance by Marx, Mill, Ricardo, and Marshall (Hundt 1995)? Some authors have referred to Mill's pioneering work on inductive reasoning as a possible road for generating knowledge (Erreygers and Jacobs 2005; Blaug 1980). How did economists in the late nineteenth and early twentieth century – for instance Keynes, Menger, von Hayek, Wicksell, or von Mises – reflect on the use of language in economic theories and model building (Muchlinski 2011)? How did these economists view the function of language regarding the tools of economic theory and modelling (Bonadei 1994; Maennel 2002; Priddat 2008)?

Without going into detail, it is possible to argue here that discussions on the constitutive role of language for economic theories and, hence, the 'linguistic turn' in economic literature, were only temporary. The predominant concern regarding language in economics is the question of how language can be used to achieve greater efficiency or effect in communicative interactions by emphasizing language as a public good (Breton 1999), as many publications – particularly from the University of Toronto – have explored. The 'language analogy' as proposed by Winkler (2000) also refers to the efficiency of monetary policy by emphasizing common understanding as a procedure. As was already outlined, he dissociated himself from the assumption of 'common knowledge' in order to shed light on the non-linear process of communication by proposing the use of language analogy with monetary policy.

Beyond the examples sketched in the previous paragraph, postmodern discourse has worked on hermeneutic principles in economics and has tried to examine the role of interpretation in understanding economic theories. Benton (1990), for instance, proposed a hermeneutic approach to economic science and raised the question: 'If economics is not science, and if it is not merely mathematics, then what could it be?' These debates have focused on the role of economic metaphors, symbols, and model-building in order to establish a new perspective and to get into distance to the traditional view, for instance, to the Chicago School. Most contributions have emphasized the uneasiness with the dominant modernist viewpoint in economics, which was often discussed as if the modern approach to economics were without any alternatives (Amarillo 1990). Any contention to define a method of research as being without any alternative must be regarded sceptically. Yet, this has been the case in economics because the model view, deductive reasoning and, hence, a strict formal description, have been the key methods since the 1950s. This cognitive 'straitjacket' is not acceptable (Hillard 1995). This

dominating monomethod – which one might even say is akin to a monotheistic approach – seriously damages scientific work.

Some authors added further considerations to McCloskey's approach to rhetoric and on discourse strategies in economic sciences (Backhouse 1993; Bill 1993). McCloskey restored the significance of language in economics by investigating economics as rhetoric. Closkey (1983, 513) pointed out the credo of economics: 'I am scientist: give way.' Economists should, in her view, first of all reflect that they are engaged in rhetorical interactions and also acknowledge the impact of their rhetoric. Her work on discourse strategies in economic sciences started with thoughtful, provocative articles and ended suddenly at the beginning in the nineties. She expressed her position in this way (1983, 82–83):

> By 'rhetoric' is not meant a verbal shell game, as in 'empty rhetoric' or 'mere rhetoric' ... rhetoric is the art of probing what men believe they ought to believe, rather than proving what is true according to abstract methods; ... it is the art of discovering good reasons, finding what really warrants assent because any reasonable person ought to be persuaded; ... it is careful weighing of more-or-less good reasons to arrive at more-or-less probable or plausible conclusions – none too secure but better than would be arrived at by chance or unthinking impulse.[3]

Rhetoric is based on conversation, and it is this which characterizes economic interactions within social interactions in general. With a pioneering paper on rhetoric, McCloskey attacked the positive-economic methodology as proposed by Friedman and initiated further debates. Most branches of economic research adhere to the widely accepted scientific principles of positivism and behaviourism. The net effect of this view of the scientific method, captured in the idea of modernism, is the hypothetic-deductive method of conclusive arguments arising out of already fixed simple premises. This modernism is assumed to be beyond any kind of doubt or uncertainty (McCloskey 1983, 484).

To put it briefly, modernism is the orientation of the Chicago School. Economists avoid the reflection on its premises and opening up their discussion towards an interdisciplinary approach to economic questions. If economists based their models on the hypothesis of rational expectations and the common knowledge assumption, which they generally do, then uncertainty (and uncertainty about the future) is eliminated by these premises. On the one hand, most economists demand positive-economic methodology as suggested by Friedman, and on the other hand they refuse falsification.

The debate on rhetoric, economics, and methodology turned back to modernism as proposed by Friedman's principles based on Popper's claim of falsification (Henderson Dudley-Evans 1993, 132–152; Muchlinski 1996a, 1998a). The key goals of the accepted methodology of economists, since Friedman's article, have applied modernist principles to economic scholarship as follows:

a) the priority of forecasts,
b) the relevance of forecasts for modelling,
c) the implication that observations require the repetition of experiments and their objectivity,
d) adherence to the criterion of falsification of a theory,
e) adherence to methods of quantification and measurability in analogy with mathematical modelling of physics,
f) the creation and maintenance of scientific procedure by applying methodological rules, and
g) the view that a scientific explanation of an event should be subordinate to an extensive law of economics.

Friedman explicitly proposed that economic scholarship should not reflect so-called realistic assumptions but reliable forecasts which should be tested empirically. Therefore, the mainstream view on economics is that forecasts and empirical testing are the key tasks of economics. The demand for empirical testing created the problem that the results could not be interpreted accurately because of the missing link to economic reality. If the premises are not linked to the contemporary world, given Friedman's advice, how could the result of economic modelling be empirically tested?

Postmodernist economists also criticized modernism's maintaining of knowledge without any doubts, without metaphysics, moral sentiments, beliefs, and persuasions (Medema and Samuels 1996; Samuels 1990). Scientific research and results which are completely free from these concerns will, in the extreme, only provide meaningless standards which are manifested in non-personal solutions.

Another predominant work on methodology beyond Friedman's article is Blaug's (1980) *The Methodology of Economics: Or How Economists Explain*. This book also adheres to Popper's view on positivism by defending abstract and universal principles. McCloskey (1983, 491) objected:

> Words like these flow easily from a modernist's pen. But why would preaching unrelated to actual practice be worth considering at all?

> Why do economists have to defend in the abstract their principles of reasoning, and before what tribunal?

Blaug's demand to differentiate between 'wheat and chaff' in order to implement positivist standards in economic science is no longer convincing. Scientific progress is not achievable by neglecting alternatives or by adherence to rigidly fixed rules or universal principles which lack contexts or circumstances. Devotion to rigid rules of scientific process, modelled in analogy to mechanical procedures, is not a sufficient point of reference in economics as a social science. Economists who are devoted to modernism often start their argumentation with words like 'objective'. McCloskey asked: 'Should it all be "objective", "experimental", "positive", "observable"? Can it be (ibid)?' Of course it is not possible, otherwise the theoretical improvements made by different people and epistemic communities would have been much poorer than they are. As the history of science shows, inventiveness is not based on these principles.

The conclusion by McCloskey is that rhetoric is too narrow. By focusing only on model building, economic science itself has moved towards metaphysics. McCloskey summed up that these – and other – words and metaphors in economics are not merely ornamental but paradigmatic. For instance, the notion of 'elasticity' was first of at all a 'mind-stretching fancy', and the term 'equilibrium' was compared with an apple in a water basin. Many terms are brushed-up, like 'competition' or 'children as durable goods' (human capital), and so forth. They are used as metaphors. A metaphor creates a coincidence of thoughts and a transaction of contexts. For instance, the metaphor 'human capital' brings together two distinct realms by supposing the interdependency of 'human' and 'capital'. Also, the metaphor 'car' and 'central bank' links two separate domains, driving and monetary policy, into a cognitive and emotional relationship by use of language.

But economists do not expressly reflect on this, either. Metaphors, such as the 'invisible hand', evoke certain persuasions or convictions. Most economists, though, avoid elucidating the implications and consequences of such metaphors. Some economists find the metaphor 'invisible hand' impressive and convincing, and imply that nothing has to be explained beyond this and no further discussion seems necessary. The alternative to such modernist tendencies of the sciences is not silence. The alternative to silence is the continuity of reflecting the use of metaphorical language regarding its implication and consequences. McCloskey proposed considering the rhetoric of economics as a reflexive method. Economists do have a great knowledge about the world they have hidden behind an

artificiality of created words or concepts. The use of a reflexive rhetoric would be more effective in order to explain economic problems.

4.2 The constitutive role of language in economic models and description

Models of central bank reality and contexts are driven by the use of language. Economic problem solving cannot be separated from the use of language. Given the fact that a central bank can control only the short-term interest rate, which has long-term effects, and within different interactions in various financial markets, a central bank needs to reflect on its own contribution to the creation of the context which surrounds the decision-making process of both the financial markets and the central bank. The circumstance within which a central bank acts is neither given nor invariant. The meaning of words, sentences, and the understanding are not given. Language as an action of communication configures the context or situation in which any central bank acts. The constitutive role of language has to be recognized for economic models and economic description. One example is the debate on central bank accountability and reputation, which is also driven by changing views of how central banks should implement their mandate.

Brayton et al. (1997a, 1997b) constructed a pioneering econometric model of the Fed. The authors gave an instructive example of the long-lasting process of learning how to link the methods of economic modelling concerning the Federal Reserve Bank and its monetary policy in relation to the building of expectations. They propounded that the aims linking the development of these models to historical contexts and perceptual context in which they have been evolved should be articulated in order to understand its functioning.

They differentiated two generations of macro-models in the Federal Reserve based on the view that adaptive learning and asymmetry of information is relevant. They have created the first generation model based on the IS/LM/Phillips-Curve and the Federal Reserve policy model today (1997, 49).[4] The enlargement of the first generation model (FRB/US) by an international framework, that is, the FRB/Global – also implies the abandonment of restrictions of the IS/LM/Phillips-model. The FRB/Global framework integrated international finance and trade. Brayton (1997a, 47f.) et al. discussed the great efforts made to overcome the bilateral view and its formulation: the substitution of bilateral equation with multilateral equation for describing the economic interdependences of the U.S. economy with the rest of the world.

Brayton et al. outlined the real challenge for the continued process of the improvements of the existing model, namely the specification of functions which could be described by an open economy model of exchange rate determination. The radical revision on this part of the model development was implemented through the 1980s and the early 1990s. Whereas this example demonstrates that the process of the improvements of model building will never stop, other models in economics are seen as invariant. The new macro-models from the middle of the 1990s on have been incrementing both the adaptive expectation hypothesis (vector auto-regression: VAR) and the rational expectation hypothesis (RE). The VAR model describes how agents react against the historical background (backward-looking or adaptive expectation) of inflation, interest rates, output, and the long-run expectations of inflation and interest rates. This model acknowledges the limited information available to the agents. In contrast to this, the rational expectations hypothesis describes the model-consistent, or so-called rational expectations which are supposed to be identical with the model itself.

Using both hypotheses in the FRB/US and FRB/Global the results are significantly different and provide the flexibility of responses which are needed to work within a situational approach. In the paper, Brayton et al. (1997) compared at great length both premises encapsulated in both models regarding the inflation rate, output gap, the Federal Reserve funds rate, and the ten-year government bond rate. But this degree of flexibility should not be confused with 'constantly changing policy advice and interpretation', which is not possible. Brayton concluded all these innovations were linked to theoretical and empirical developments in central bank practice and, therefore, guided the way to the continuity of model improvement. In another paper, Brayton et al. (1997b, 227) pointed out:

> The approach to expectations taken in the FRB/US model is best understood in the context of a debate that has engaged macroeconomists for the past twenty-five years. ... However, they disagree about the basis on which individuals form expectations and thus about the way to model them.

One striking pattern of the model discussion was how to model individual expectations and how to link it to economic modelling and economic circumstances:

> The lack of adequate data has meant that builders of macroeconomic models have had to specify a priori how individuals form expectations.

> Most models developed in the 1960s and 1970s, including MPS, incorporated the simplifying assumption that people form expectations *adaptively*. Under this assumption, for example, the expectation for inflation in the next year is based on the recent inflation trend. Similarly, expected interest rates depend on past interest rates. (ibid)

The innovation of the phenomenon of 'overshooting' investigated by Dornbusch (1976) as well as radical changes of view on how economics should be explained, given by the *New Classical Macroeconomics*, as they also configure the process of macro models by the Federal Reserve. At this point, the 'Lucas-Critique' had become temporarily important (Blinder 1987; Muchlinski 1999a). To sum up:

> The rational expectation hypothesis implies: 'Rational or model-consistent expectations are identical to forecasts produced by the macroeconomic model in which the expectations are used. This assumption has been used in many macroeconomic models developed in the past fifteen years and is one option for the formation of expectations used in FRB/US'.[5]

Reference to the approaches and assumptions above has been brief for the sake of simplification; that is, the assumption presented here of adaptive or rational expectations is not the ultimate state of research in economic modelling. This approach to modelling does not provide the knowledge or understanding economists need to understand mutual and complex interactions among the central bank and the private agents of financial markets. Consequently, Brayton et al. (1997b, 229) stated:

> Thus, individuals form their expectations of the future using rules of thumb or easily computed formulas, such as adaptive expectations. At the other extreme is the view underlying the rational expectations approach. In this case, collective and analyzing information is assumed to have small costs and large benefits, and consequently individuals base expectations on sophisticated forecasting models that make use of all relevant data. Between these extremes is the view that forecasting has both significant advantages and significant costs. Such a circumstance should lead households and firms to choose forecasting models that closely resemble their economic environment but fall short of a complete model of the economy in every detail. In FRB/US, one of the options for expectations formation, referred to as VAR expectations, is motivated by this view.

As the assumption of VAR expectation shows: models which work on this assumption do not follow the assumption of perfect information but of forming expectations on the basis of selected information. These methods draw attention to central banks in historical time and space. Central banks do not interact in universal time and space, but in situational contexts and circumstances. As Brayton et al. (1997a, 230) wrote:

> [T]he VAR approach in the FRB/US model assumes that households and firms form expectations primarily on the basis of their knowledge of the historical interactions among three variables: the Federal Reserve funds rate, the cyclical state of the economy, and the rate of inflation.

Modelling assumptions which refer to historical and situational contexts imply the abandonment of the rigidly fixed premises of most models. Working with VAR expectation, for instance, allows simulating how quickly or slowly a change in monetary policy – say the tightening of the money supply in order to reduce inflation and inflationary expectations – will be perceived by the agents of the market. An immediate perception of a change in the monetary policy would be associated with an immediate perception of inflation expectations by those operating in the financial markets. Model consistency concerning the expectation-building process – for example, the anticipation of a future change in monetary policy – can be constructed alongside the incorporation of information the firms and consumers acknowledge in making a forecast. To model the VAR expectation includes 'advance recognition' by specifying the expectations regarding both long-term inflation and interest rate which 'respond before the event' (ibid).

As Brayton et al. described, the emergence of the economic sense regarding central bank strategy, decisions, and actions is based on history and the use of language. However, to read and understand a model on central banks one needs to be trained in mathematics. Yet, one also has to acknowledge that economic questions, phenomena and problems are due to everyday perceptions and everyday language. At this point it should be mentioned that economic problems are not rooted in the vagueness and the non-exactness of everyday language. The problems as described by modern central bank literature are expressed in everyday language since they arise out of mundane contexts.

What can be drawn from the example put forward by Brayton et al.? If central bank literature refers only to deductive reasoning, that is,

to the model views, it misses the point and it can not explain how central banking works. Central banking does not function as deductive reasoning but rather as a reflexive procedure of different methods and instruments, hence new literature on this issue enlightens the effect of communicative interactions. If central banking or economics concentrate only on deductive reasoning, this 'formal aestheticism' (Morishima 1991) will exclude important topics of research and will lead to an impoverishment of scientific skills. I would like to emphasize that economics as a social science needs to enlarge on traditional economic methods and develop additional methods and instruments beyond such monopolistic methods.

One can take the example of the gold standard, as discussed in textbooks, by its supposed 'rules of the game'. The central banks were accustomed to acting as if the conditions of such a gold standard applied (Tullio and Wolters 2003). According to historical investigation, the gold standard came into existence as an international agreement on the international rules of the financial system (Flanders 1990; Spahn 2001). This meant, though, only insofar as a few central banks, particularly the Bank of England and the Federal Reserve Bank, had started to coordinate their policy of interest rate settings. It was on this basis that such rules of the game could be developed and implemented (Mundell 2000). No rules in social sciences become accepted as hidden rules. The rules of the gold standard may be seen as an aid to for organizing and commencing a particular game, but the fact was that the rule came into reality as the real practice of central banks, that is, inasmuch as the central banks used it to start to coordinate their policies. The context of central banks in modern society, and its link to the constitutive role of language, can be explained by referring to the discussion of different monetary policy regimes (Issing 2005b; Fracasso et al. 2003; Friedman, B. 2004; Kuttner and Posen 1999).

4.3 Meaning, intention, and utterance

In order to outline the complexity of communicative interactions, I have introduced a conceptual framework focusing on distinct dimensions. I referred to Giddens on the interdependence of structures and actions; to Bourdieu on habitus and its social impregnation; to Habermas on understanding by discourse and by agreement; to Searle and aspects of the 'speech act theory', and to Davidson on understanding by communicative interacting and by interpretation. I focus here on the theoretical foundation provided by Grice. Grice's theory can be outlined

in three steps: (4.3.1) the speaker's intention and meaning, (4.3.2) the principles of cooperation or postulates of conversations, and (4.3.3) the theory of 'implicature'. Grice contributed to language philosophy through his theory of conversation comprised of these three steps.

In current economic literature, references to Grice's work are prominent in language philosophy literature and also in game theory. For instance, Ariel Rubinstein (2000) built his theory, 'Economics and Language', upon Grice's view. As Rubinstein's work has already been discussed in economic literature, Grice stated that his approach to communicative actions entails the common acceptance of methods of communication, that is, the principle of communicative cooperation and associated maxims, which he supplemented by a new term, 'implicature'. Grice's famous proposal concerning the realm of the theory of communicative interaction is his theory of implicature (Grice 1989). The concept of implicature is based on Grice's differentiation between the speaker's utterance and the speaker's meaning. The speaker's meaning is to be seen as the speaker's intention. As we will see later on, Grice's theory of communicative interactions remains focused on the speaker's intention (Grice 1957/1989). According to Grice's view there is no difference between meaning or intending something with an utterance (Grice 1969).

4.3.1 The speaker's intention

Grice interpreted meaning in the manner of the questions, 'What do you think or what do you believe?' or, 'What do you mean by this?', that is, 'What is your opinion?' Grice provided a theory of meaning in which the term 'meaning' is based on a speaker's intentions and on what she or he thinks. The interpretation of 'meaning' by Grice differs from its meaning in modern language science, in which the practice and use of the word or sentence has been emphasized. Moreover, it differs from linguistic science in regard to the extension of the meaning in the semantic field (Trabant 1986). The term 'meaning' in ordinary language often refers to imagination, ideas, or persuasions. However, it also refers to ancient philosophy and the view that meaning is embedded in the mental state, soul, or consciousness of a person. The word 'idea' goes back to Aristotle. In light of this philosophy, the term 'utterance or expression' was interpreted as the expression of a mental state or of the soul (Brentano 1956, 24). Therefore, the utterance or expression ('hermeneia') was understood as the expression of the soul. According to this Latin tradition, which can be categorized as *de interpretatione*, the function of language was seen as a vehicle of the mental state, thoughts,

or the soul and, hence, as neutral towards mental states, thoughts, and the soul (Trabant 1999). Therefore it was argued that intention as interpreted by a mental state or soul needs a medium of transmission to be articulated and in order to be communicated. The Aristotelian philosophy is seen as 'Aristotle hermeneia'. As I have already mentioned and will explain in Chapter 5 in detail, Analytical Philosophy states that language has a constitutive role – and, hence, is *not* neutral to thoughts.

Grice objected to the view that a 'standard of meaning' contributes to the meaning. The view of a standard of meaning harks back to causal theory, such as 'John is tall' is part of the meaning 'John is an athlete' (Grice 1989, 216). Causal theory maintains there is a standard meaning of signs independent of their use. Any causal theory, therefore, ignores 'the fact that the meaning (in general) of a sign needs to be explained in terms of what users of a sign do (or should) mean by it on particular occasions' (Grice 1957, 217). Grice refused the view of a 'standard meaning' of signs because the meaning of an utterance is not identical with the meaning of the signs being used. He objected to the view that language is based on the use of precisely defined signs. 'What (does) a particular speaker or writer mean by a sign on a particular occasion (which may well diverge from the standard meaning of the sign)' (Grice 1989, 216).

Grice linked the speaker's utterance with his meaning and intention. 'I use utterance as a neutral word to apply to any candidate for meaning$_{NN}$; it has a convenient act-object-ambiguity' (1989, 216). The speaker's utterance is the way the meaning has developed out of his intention. Only in certain respects is it possible to argue that Grice advocated speech act theory. The speech act theory (Austin and Searle) emphasized that talks, speeches, and sentences imply the upcoming actions by the listener as a so-called 'performative' form. Speech act means a way of acting. For instance, if person A says 'close the door', the listener, person B, will act to close the door (or maybe will not act). Or if person A says 'I promise to return the book I lent to you', person B (listener) anticipates the action. In respect of speech acts, it is not possible to apply criteria of truth or falsehood to them. Traditional language philosophy stated that a sentence is truth only if, and insofar as, it corresponds to reality.[6]

In Grice's view the speaker's utterance also indicates the speaker's intention, which has to be received by the hearer or the audience. Regarding the relation of speaker and hearer, Grice stated that such relations are highly dependent. However, the role of the speaker is to transmit his intention to the hearer in order to be perceived in the

intended manner. We should read the quotation as a whole, given by Grice (1989, 219):

> A must intend to induce by x a belief in an audience, and he must also intend his utterance to be recognized as so intended. But these intentions are not independent; the recognition is intended by A to play its part in inducing the belief, and if it does not do so something will have gone wrong with the fulfillment of A's intention. More over, A's intending that the recognition should play this part implies, I think, that he assumes that there is some chance that it will in fact play this part, that he does not regard it as a foregone conclusion that the belief will be induced in the audience whether or not the intention behind the utterance is recognized.

Grice (1989, 220), hence, defined the meaning, that is, the speaker's meaning, as an expression of his or her intention:

> 'A meant something by x' is (roughly) equivalent to 'A intended the utterance of x to produce some effect in an audience by means of the recognition of this intention'.

In ancient philosophy the recognition of the utterance of the speaker by the hearer is regarded as the transference of intention by neutral language. According to this view, language matters as a neutral transmission. It is a vehicle or veil of thoughts. In other words, the intention or the mental state has been sent from the speaker to the hearer through language. However, particular problems in Grice's thinking still remained. If, for instance, the effect the hearer had realized was caused by the speaker's utterance, what gives reasons to conclude from this that the hearer also received knowledge about the speaker's intention? Grice conceptualized this as follows: whereas the speaker acts, the hearer reacts simultaneously. This line of thinking brings us to another crucial element in Grice's view. Any speaker's utterance causes an 'act-object-ambiguity' according to its purpose (see above). This implies ambiguity regarding either the sound or the content of an utterance. One asks what should be recognized more, the sound *or* the content? Beyond that, one might ask why should such a distinction be made? The 'act-object-ambiguity' draws attention to the result of an action and to the utterance as an action itself (the expressed sentence).

Given this line of argumentation, Grice followed in the footsteps of Aristotle, who distinguished the realm of actions into three aspects: (a)

acting as an action, (b) acting as a potential of an action and (c) acting as a result of an action. Grice, then, moved a small step forward trying to refine the constituent role of language.

Grice remained defending these three distinct realms while neglecting the research by Humboldt, Wittgenstein, and modern language scientists. Both Humboldt and Wittgenstein argued that language and reality are inherently connected because of the constituent function language has. There exists no external rule which can be applied or can assign language to different realms of reality. Since Humboldt's research on language, scholars have objected to the view that language can 'apply to' reality.[7] The modern view of language and, hence, the so-called 'linguistic turn', emphasized that different uses of language constitute views or perceptions on reality differently.

As outlined, Grice's concepts of meaning were rooted in the speaker's intention. Nevertheless Grice left it open to debate if the intention as a reference should be interpreted in the sense of idea, imagination, or opinion. The common goal of the communicative action implies that the speaker has to mention reasons so as to assume that the hearer is able to appreciate what is said as a consequence of what the speaker had said. The speaker must have grounds to suppose that the hearer understands according to the action itself because the action is identified with the utterance. According to the above quotations, the goal of a communicative action is described by the effect of the action. Grice had replaced the term 'beliefs', which he had used before, with the term 'effect'. The term 'effect' allows more space and a broader framework in his approach to communicative interactions as being observable by effects. In saying that the goal of communicative action is its effects, one is inclined to associate this with something perceivable. To use the term 'effects' allows us to avoid association with inner, or mental, processes of the speaker. Furthermore, Grice assumed that the term 'effect' would permit the integration of the reactions of the listener into his model of communication.

If one asks about the reasons for a communicative action then we assume that the action is based upon specific grounds and upon rationality. If the question about the intention of an action is analogous to the question about grounds, then grounds have to be recognized as such. If we interpret Grice in the way proposed, for example, by Wright (1975), that the "utterer's" intention is neither identical with his plan nor with his imagination, idea, or persuasion, then intentions can be interpreted as a part of a communicative action. Nevertheless, this kind of interpretation would touch only slightly on the constituent function of language as introduced by modern language philosophy.

What might support Wright's interpretation is that Grice replaced his early term belief with the term effects in order to point to the results of a communicative action. Grice also combined this substitution with the presupposition that the effect of an utterer's intention, that is, the action, can be controlled by the hearer. But, as we will see later on, this supposed control is an illusion. Grice tried to incorporate the active role of the listener within the communication dynamic so as to limit the key role of the speaker's intention. Grice (1969, 92) tried to explain his efforts to integrate the listener into his model of communicative interaction with the following definition:

> '*U* meant something by uttering *x*' is true if, for some audience A, *U* uttered *x* intending: (1) A to produce a particular response r, (2) A to think (recognize) that *U* intends (1); (3) A to fulfill (1) on the basis of his fulfillment of (2).

What at first glance seems to be circular reasoning could be interpreted as deductive reasoning based on the underlying presupposition that the speaker wants to cause certain effects on the hearer. Communicative action will take place only if the hearer understands what *should be understood* according to the speaker's intention. Grice explained that his definition shows that the audience (A) understands the intention of the utterance (U) not as caused effect but rather by reasoning (ibid).

Grice demanded two kinds of intention: (a) the speaker's intention to evoke a certain effect by the hearer, and (b) the intention that the hearer is recognized (a). Moreover, Grice asserted a particular relation between both (a) and (b). The recognition of (a) through the hearer should lead to the intended effects, understanding by the hearer. Grice, then, claimed that he had integrated the recognition by the hearer.

If we relate the above consideration to a central bank – (a) its mandate of steering the inflations expectations of (b) the listener, the agents in the financial markets, by setting the nominal short-term rate in order to fit the goal of long lasting price stability, we might grasp the example immediately.

For instance, Goodfriend (2005), among other authors in modern central bank literature, relates the communication of a central bank to the mode of a transferred intention from the central bank to the audience, that is, the agents in the financial markets. Goodfriend emphasized that a central bank needs to anchor the inflation expectations of the financial markets in order to derive the benefit of enlarging the flexibility of interest rate policy. 'Recent theory and practice ... teaches

that a central bank enhances the performance of the market by creating an environment of dependable low inflation' (2005, 253). Even if it is undisputedly a central bank's genuine task to steer market expectations, this does not imply that steered market expectations are to be interpreted as a transformation of the intention of the central bank to the audience. However, serious doubts arise as to whether the aim of a central bank to steer market expectations can be explained by reference to Grice's model of conversation and communication. I consider these doubts in Chapter 5.

Before I turn to the second issue of Grice's view as mentioned in the beginning of this chapter, I would like to summarize the critiques made of his first issue. My criticism of Grice is as follows: this strong presupposition of Grice that the hearer knows the speaker's intention implies that the reaction of the hearer is symmetrical to the speaker's intention. Both speaker and hearer have reasons to communicate, that is, a common goal. According to the presumed symmetry, both agents create the understanding actively. Grice stated that this symmetry enlightens his theory of dialogue. The hearer recognized the intention of the speaker towards the creation of a certain effect.

Doubts arise as to the premise of whether it is possible that the speaker is able to intend what has been assumed in this model of communication. Grice's answer to this is that intentions are more like the aims of a reconstruction and are to be seen as the minimum condition of every communicative action. Communicative actions without intentions do not make any sense. The same is true for actions without rationality and grounds. I think the notion that communication without intention is meaningless misses the point because doubts are reasonable as to whether the listener's reconstruction of the intention of the speaker is identical with the intention itself, or is rather an interpretation of the presumed intention of the speaker. Grice stated that the reconstruction is based on inductive reasoning.

However, this inductive conclusion to meaning lacks clarity as to how language functions. The meaning of a sentence does not label an object or a thing; rather the meaning refers to the interactive communication in the context. The general meaning neither evolves by inductive reasoning, nor by the process of the indefinite analysis of the meaning into its simple components.[8] Every person operates with words and sentences uniquely in each different situation with respect to the given general meaning or acceptability. This is why Humboldt explained that the variety of world views and of understanding is constructed and combined through the variety of the use of language. Grice undertook

several attempts to move beyond the traditional theories of meaning which are focused on the property of a word or its truth. He stated that it is most important to address the speaker's utterance, that is, action, in order to grasp the meaning.

We have to ask how the hearer in Grice's world could know whether he understood the speaker's utterance? While Grice stated that the hearer identifies the speaker's intention, he left it open as to how this knowledge should be possible. Grice maintained that the action mirrors the speaker's intention – given the capability of the hearer to interpret. Following Grice's line of argumentation the term 'meaning' is a manifestation of the speaker's intention, which the hearer already knows. He supposed a symmetry of both the speaker and the hearer. No distinction is made between a speaker's and a hearer's intention. Nevertheless, the hearer should be the one who controls the effects of the communicative interactions given the speaker's intention. Insofar as the dominant role of the speaker's intention still remains in Grice's approach, his attempt to integrate the hearer into communicative action theory also fails. Grice stepped away from the traditional conduit metaphor. He also criticized the stimulus-response mechanism modelled as a linear sender-receiver relation. In his first step, Grice presupposed the given meaning of the speaker's intention as perceived through action by the hearer. In his second step, however, he neglected that the meaning is something which is developed within the communicative interaction itself.[9]

4.3.2 The principle of cooperation or postulates of conversations

I turn now to the second element of Grice's approach. He proposed a principle of cooperation and associated maxims and the term 'implicature' to improve his theory of communicative action. While economists refer to Grice's principle as a renowned theoretical approach to communication, they do not discuss the important implications and conclusions of his approach for economic discourse, and this will also be considered in the discussion. Grice attempted to precise communication as a regulated procedure. He argued that communication procedures are based on rational and economic principles. The use of language is as being linked to its economic usage and based upon the consideration of trying to say as much as possible by the use of little and plain words.[10]

The principle of cooperation implies: 'Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged' (Grice 1989, 26). The principle of cooperation is conceptualized as a rational mode

of communication and is focused on the understanding. The inherent consideration of the first part of this principle has widely been accepted in the literature although the second part, that is, 'the accepted purpose or direction', is still controversial because it is not clear what 'the accepted purpose or direction of the talk exchange' means. I find it neither conclusive to argue that communication is a 'talk exchange' nor that the direction of the communication has to be given in advance. This reminds me of the 'conduit metaphor' suggesting communication is a linear directed path from the sender to the hearer. The maxim of rational communication should initiate communication by aiming rationally at a mutual goal, that is, aiming at the effect of a communication. Understanding should thus be seen as the result of an assumed rational mode of communication.

The cooperation principle, or principle of conversations, was specified by Grice (1989, 28) by way of associated maxims – four postulates of conversations – which he defined as analogous to those of Immanuel Kant: quantity (*be informative!*), quality (*do not fool the audience, provide truth!*), relation (*be relevant!*), and manner (*provide clarity!*).

What is meant by this? The maxim *quantity* deals with the maxim of information, *quality* of information with the supermaxim, *relation* with both agents, sender and receiver, in the communicative interaction and the aspect of *manner* as providing as much clarity and communicative performance as possible to the situation. Grice thus defined the principles of conversations by definitions (1989, 26–27):

(I) Quantity:
   1. Make your contribution as informative as is required (for the current purpose of the exchange).
   2. Do not make your contribution more informative than is required.

(II) Quality: Try to make your contribution one that is true.
   1. Do not say what you believe to be false.
   2. Do not say that for which you lack adequate evidence.

(III) Relation: Be relevant.

(IV) Manner: Be perspicuous.
   1. Avoid obscurity of expression.
   2. Avoid ambiguity.
   3. Be brief (avoid unnecessary prolixity)
   4. Be orderly.

The maxims and subordinated maxims listed in the quotation above are related to each other. For instance, the maxim of quality and its

subordinated maxims are not to be taken in isolation; rather, they play a role within these principles of conversations as a whole. The maxim 'be relevant' makes sense together with the maxim of both quantity and manner. To utter something which is relevant will establish a line towards the goal of communicative interaction.

The above principles are often cited in theories of communication and language philosophy (Kober 2002). They are accepted as guidelines for communication by which the authors begin their own considerations so as to move further towards particular theoretical approaches (Stekeler-Weithofer 1999; Scholz 2001).

Grice introduced this principle of cooperation or the postulates of conversations as a normative rule. What does it imply? We normally do not want to irritate or to fool other participants in dialogues. The principle of cooperation, therefore, frames most communications with a view to rationality. As a normative rule it should frame communicative interaction generally because people aim at certain effects of communication. People aim to follow these principles in order to achieve their aims.

As the quotation above reveals, the principle of cooperation is oriented to the speaker. The speaker utters a sentence within a certain situation, which also indicates that this sentence should be interpreted as a rational contribution aiming at a mutual accepted purpose of the communication. If understanding is seen as a presumed connection to rational communication, then the effect of understanding is guaranteed. The hearer, then, interprets the utterance of the speaker as a contribution aimed at that mutual purpose. The hearer should rationally avoid interpreting the speaker's utterance as an objection to this mutual goal which he or she shares with the speaker.

However, in my view, this should also point towards the context. The maxim 'avoid ambiguity' and 'avoid obscurity of expression' is addressed towards the idea of rationality of communicative action as outlined previously. It can be read as an appeal to the actors in their aiming at the common goal. But this maxim also can be seen as a demand for applying traditional scientific principles addressing an exact, measurable, and non-ambiguous process which has to present exact, non-ambiguous, and measurable results in order to fulfil the common sense view of science, as rooted in the principles of Descartes and Leibniz. Grice, however, neglected the possibility and necessity of error, of deception, and of the bounded possibility of exactness, of the non-ambiguousness of science and knowledge.

Of course we shall ask why the speaker should act in such a manner as proposed by the cooperative principles and associated conversational maxims put forward by Grice? His answer was,

> It is just a well-recognized empirical fact that people do behave in these ways; they learned to do so in childhood and have not lost the habit of doing so; and, indeed, it would involve a good deal of effort to make a radical departure from the habit. (Grice 1989, 29)

Here again, he presupposed the rational action as the basic pattern of any action. Acting reasonably is to be seen as a common goal because it makes no sense to refuse it. Therefore, Grice proposed supporting a kind of conversation that implies principles for both the sender and the receiver. Moreover, he assumed what has to be accepted by the speaker is also a 'must' for the hearer. There is no escaping this principle of cooperation and the associated maxims. Grice denied delivering a normative claim to communication (1989, 29). He appealed to a certain kind of relationship between the agents, which he compared with a car accident and the expectation that another person who perceives that accident is willing to help, to coordinate with the person who is a victim of the accident. Therefore, both are motivated to communicate or coordinate and, hence, this is characteristic for every communication. Grice concluded that any communication aims to 'distinguish cooperative transactions' (1989, 29). However, in comparison with Habermas's approach to understanding, Grice draws attention to communicative interaction as a certain type of rule-following communicative behaviour and not as the mode of developing a way of communication in order to reach a common goal.

As the quotation above indicates, Grice based his view on two key arguments: (a) on the inductive-probabilistic argument, and (b) on a particular consideration regarding human behaviour. The roots of the principle of coordination are to be found (a) in the methods of the empirical science and (b) in evolutionary pattern. Along this line of argument we also find these principles as parts of the scientific process combined with a particular view of human nature. To focus on this explanation one has to ask what role is left to circumstances, contexts and culture? Unfortunately Grice gave no answer.

Understanding requires us to recognize the context and to apply hermeneutic principles to the communicative interactions, such as the assumptions of coherence and rationality or truth. The assumption of rationality is – as explained above – a prerequisite of any communicative

action which aims towards an understanding. The assumption of truth refers to credibility of the communicative actions by the agents involved. Reference to a conventional meaning or towards external rules of language is not possible. The conventional meaning of a sentence only provides the fragment of a proposition. Let us take the example of understanding utterance at a press conference held by a central bank official. The maxim relevant for consideration is:

(II) Quality: Try to make your contribution one that is true.
    1. Do not say what you believe to be false.

A central bank press conference mostly entails two main parts: the speaking activity of a chairman or speaker of the central bank and a written document. Beyond this written document the usual case is that the chairman or speaker proceeds to answer the questions put by the interviewers. According to the reasons explained, in light of the modern view of central bank theory monetary policy works *through* markets.

Let us expound on the textual horizon of this maxim, (II) Quality. If, for instance, the sentence runs: 'No further interest rate change is to be expected', in its literal and lexical manner the sentence implies that there will be no increase. The reporter judges the implication of this sentence: Does this sentence imply that there will be no further increase of the interest rate this year although, considering economic indicators, it would be necessary? What does the literal meaning and the implication of the utterance initiate? The interviewers at the press conference, or the public reading the reports, might have doubts about the truth of this sentence because high domestic growth and prices present another scenario of the current performance of the economy.

The reporter believes that the information by the central bank is not true because it does not fit with the economic indicators. The statement of the central bank would appear to violate the principle of cooperation. The public might argue: Does the central bank base its judgment upon the actual empirical economic performance in a way different from the public? If so, on what grounds? Does the central bank have different data about the economy than the public does? The public, then, attempts to find out from this press conference the differences between the data or the foundation of judgments upon which the central bank bases its decisions and expectations compared with the data the public has. If the assumption of a different data base is not supported by

evidence, the reporters will not be convinced. Understanding will fail because the statement of the chairman violates the *maxim of quality: 'Do not say what you believe to be false'*. If the central bank has similar data, the statement by the chairman or spokesperson at the press conference does not make any sense.

Let us turn back to the sentence used as an example above, 'No further interest change will be expected'. According to a perceived economic situation – as we assumed in the example on the foregoing pages – this sentence is not convincing. This sentence will be judged as wrong or as the central bank's attempt to lie and violate the principles of cooperation. Literally, the chairman has said that the interest rate will not be changed, but this apparently makes no sense at all.

4.3.3 The theory of 'implicature'

According to the literature, Grice contributed to a theory of dialogue by emphasizing his newly created term *implicature*. This is a technical term which is related to both the speaker and the hearer. The concept of implicature outlined the idea that any utterance also neglects information and knowledge which have to be provided or supplied by the hearer (Grice 1989, 24). I would like to add that the implication or implicature also needs to be anchored in the respective context or circumstances. Grice stated that we understand a sentence beyond its literal meaning; we understand it by its implication, which he defined by the technical term implicature. By this additional term, implicature, he further advanced the 'indirect speech act theory' of Searle (1995) towards hermeneutic principle. For instance, if person A says to person B 'Could you pass me the bread and butter, please', it is expected that person B handle bread and butter. Person A does not expect the answer 'no' or 'yes'. If person B answered 'no' or 'yes' then we could judge that B has misunderstood the speech act or is not willing to cooperate with A. Person A's speech act is a request and not a question. Searle (1995) called this an 'indirect speech acts'.

The 'indirect speech act' entails an implicit sense regarding the situation in which the sentence is said. Therefore the 'indirect speech act' implies a pragmatic or implicit sense beyond the literal meaning of the sentence. The indirect speech act lets us understand both the content and the modus of the sentence. The indirect speech act complements the principles of interpretation which need to be bounded by contextual factors. As was already outlined in Chapter 2, the context itself has no boundary.

Let us be more precise: the implicature is the additional content ascribed to the speaker's utterance in order to secure the common goal of the communicative interaction and understanding. To judge

confidently the central bank's spoken language, the participants at the press conference assess the statements against their own economic knowledge, information, and the current economic background.

In this example, then, the statement of the central bank obviously violates *maxim (II) 'Quality: Try to make your contribution one that is true'*. If data pointing to a high growth rate, and rising prices and wages in the domestic economy exist, the sentence will not be acceptable as true. As we know, the *maxim of quality demands: 'Do not say what you believe to be false.'* However, the spokesperson's statement, 'No further interest rate change is to be expected', is misleading if the participants at the press conference believe the sentence is not true for reasons explained in the foregoing paragraph.

This example sheds light on the understanding of the sentence, which depends not on the lexical meaning of the words of which the sentence is composed but rather on the perceivable economic context which surrounds the press conference and the communicative interactions of the involved participants. Most of the words used in a spoken language – speeches, discussion, interviews – and also in written language – statements, comments, reports – are vague and ambiguous in a lexical sense: that is, their meaning is not fixed lexically. To understand, then, requires shedding light on the context or practice within which, or through which, the word or sentence has been used (Bach 1994). Without doubt, for economics as a social science it is of great interest to deal with these questions on how meaning evolves and how sentences are understood in different circumstances.

At this point, monetary policy or central banking leads directly to such questions of understanding. These questions of understanding and meaning inevitably enlarge the traditional view of economic science. Regardless of famous examples in the history of economic science, the understanding and the evolution of meaning in economics as a social science have not been a topic of economic theory until now. Since modern central bank theory and policy have moved towards an interactive approach of both the central bank and the agents of the financial markets, the understanding and the evolution of meaning in economics have assumed great importance. How can a central bank or the chairman of the central bank know if and how the public has understood the released information?

I now want to discuss another maxim regarding the principles of cooperation:

2. Avoid ambiguity.

Let us apply this maxim (IV) to another example: if the chairman of the central bank says in a press conference, 'The interest rate will rise up to 3.5 percent', the public will understand this sentence in its literal meaning as well as take the history and the current economic performance into account. The public recognizes that the interest rate was before at the level of 3.25 percent and it also knows that during the last 12 or 24 months the interest rate has risen step by step. In a literal meaning, the statement of the chairman implies an increase up to 3.5 percent. It does not imply further decisions at all. Regarding the modern view of central banks, the public assumes the chairman has stated the truth. Moreover, the public supposes that the information release was done for the sake of clarity and information and not to fool the public. The public understands the utterance within a context which goes beyond the released information. The public supposes that the chairman, like the public itself, knows that the future level can differ from the actual level of 3.5 percent. This presumption is inevitably connected with the enlargement of the expressed sentence by a greater content, that is, by implicature.

To put it more precisely, because Grice did not discuss it with clarity, the implication does not refer to the mental state or intention of the chairman but to the context in which the sentence had been used. As we have already outlined, Grice assumed the maxims on quantity, quality, relation, and manner, and its subordinated maxims guide the understanding, for example, *maxim (I) 'Quantity: Do not make your contribution more informative than is required'*. Grice took this to open to debate how the general cooperative principle could guide a person's action and expression in a concrete situation.

The term implicature rests itself on the cooperation principle. In making a distinction between the speaker's intention, the meaning and its implication on the one hand and the utterance to be perceived and interpret by a hearer on the other hand, Grice distinguished between what can be understood by conventional meaning and what cannot. He, then, assumed the speaker's utterances can be differentiated by (a) what the speaker says and what has been understood by the hearer, and (b) what is meant with the utterance, that is, what has been implicated. Grice differentiated the 'implicature' of an utterance into (b.1.) 'conventional implicature' and (b.2.) 'non-conventional' or 'conversational implicature' (1989, 24).

The conventional implicature (b.1.) entails the literal meaning of the utterance or the sentence. Its understanding is based on conventions, that is, given understandings or practices. The conversational

implicature (b.2.) encompasses the literal meaning of the sentence and those parts which are not literally uttered in the sentence but which are parts of the communicative interactions. For instance, if the speaker's utterance contradicts the principles of cooperation and associated maxims, the hearer, then, has to judge this contradiction through an interpretative approach. The hearer asks: 'How can his statement be reconciled with the supposition that he is observing the overall Cooperative Principle?' (Grice 1989, 30). The hearer works out, or infers, from the conversational principle how the speaker's expression should be understood. The hearer assesses whether or not the speaker has left the cooperative discourse, that is, has already avoided aiming at a common communicative goal.

Box 1 provides a short cut:

Box 1 Grice's theory of implicature

Presupposition (I): The understanding is a result of (a) inductive-probabilistic reasoning & (b) prudential reasoning

Presupposition (II): The speaker's perspective, i.e. utterance, matters.
The speaker's utterance is differentiated into:
a. What the speaker said, utters, i.e. what has been understood &
b. What has not been said, i.e. what has to be implicated:
('the implicature of an utterance')

Presupposition (III): The implicature of an utterance is distinguished into:
b.1. the conventional implicature, i.e. the utterance
b.2. the non-conventional utterance, i.e. the conversational implicature (which entails non-verbal utterances)
Short: b.1. & b.2. encompasses verbal & non-verbal considerations

Conclusion: Presupposition (I) to (III): Conversational implicature roots in efforts of the hearer to interpret the speaker's utterance as compatible with the principles cooperation – at first glance it has seems to be not the case.

The conversational implicature is the part ascribed to the speaker in order to secure the common goal of the communicative action. It should give support to the view that the speaker does not threaten or damage the principles of cooperation. This is why Grice argued that the competent speaker has the feasibility to let the hearer understand what should be understood, that is, the competent speaker exploits the conversational maxims. Grice stated succinctly that the speaker gives the hearer to understand what should be understood. However, the speaker's dominance still remains. The speaker guides the understanding of the hearer. Only in the case that there is no content able to be implied

at all will doubts arise as to whether the speaker is still acting cooperatively. According to Grice, adherence to the principles of cooperation, then, should guarantee understanding.

As already mentioned above, while the consideration that utterances mostly are subject to implication has been widely accepted in the literature, the further distinction made by Grice between 'conventional implicature' and 'conversational implicature' has not. Furthermore, Grice's assertion that any communicative situation moves beyond the 'exchange of knowledge and information' according to conventional and conversational implicature is hardly acceptable. He presupposed a mutual knowledge condition which is, of course, a rigid premise regarding the role of the speaker's implicature. I doubt that by stating the mutual knowledge condition it could be possible to assume that knowledge or information could be exchanged in a dialogue. I return to this point later on, outlining why knowledge or information has to be understood, and not be exchanged like a car or stone. A key assumption of this book is that *information* is considered as *a related object*, hence as *information processing* as outlined in Chapter 2.

One objection to Grice's emphasis on the speaker's framework shall be made now: The speaker's implicature is rooted in the speaker's framework, that is, the speaker's intention, and not deducible from the general cooperative principle. In this, by emphasizing the generality of the principle of cooperation. Grice neglected the social function of rules and conventions.

What relevance does such a general rule have in changing contexts? Since Grice introduced the principle of cooperation and conversational postulates as a normative rule, one might ask how its acceptance has been achieved? Only in the case where doubts have arisen about the validity of the general principle will the principle itself become a matter of debate because of the varieties of those differences which have emerged. He introduced the speaker's ability to exploit the conversational implicature, that is, the speaker's ability guides the understanding of the hearer. It is for this reason that Grice identifies the speaker as competent.

If we accept Grice's view we can conclude the speaker implies the principle of cooperation and its associated maxims by defining certain presumptions in order to achieve the communicative effect.

One remarkable point is that the theory of implicature introduced by Grice leads to a further important hermeneutic principle Grice himself did not work out. Given his emphasis on the speaker's competence to 'exploit' the conversational implicatures, this can be reread as the

speaker's ability to apply hermeneutic principles to the interactions with the hearer. Scholz (2001, 160) proposed expanding Grice's approach to communication and language towards a 'presumptive rule'. The history of language philosophy is acquainted with such presumptive rules as hermeneutic principles. Presumptive rules function as methods to structure arguments or judgments, to conceptualize a justification or objection, an interpretation or communicative interaction (Dennett 1978, 1987; Davidson 1984; Quine 1953, 1991, Trabant 2008).

A presumptive rule also implies certain considerations of rationality regarding the communicative interactions which Dennett (1978, 242, 247, 272), for instance, defined as 'assumption of rationality' and 'presumption of rationality'. He described it as a rational hermeneutic principle in order to underline the aspect of understanding as being inherent in all communicative interactions. It is noteworthy here that the rationality assumption is not linked to the economic principle configured as *homo economicus,* but rather devoted to a goal-oriented interaction of people (Muchlinski 2006; Simmons 2006; Sullivan, Snyder and Sullivan 2008). To act in a certain manner and to communicate in a particular way also implies the strategy of coming into contact with another person. In contrast to this view, the theoretical construction *homo economics* is a non-interactive, autistic individual who acts in order to achieve his or her own benefit. Humboldt defined aiming at the other person as reaching 'you' (meeting the other person), whereas Davidson described it as a 'principle of charity' and as aiming towards 'the second person'; Martin Buber (1977) defined it as 'partner of dialogue'. Dennett (1978, 9) wrote:

> We start by assuming rationality. We do not expect new acquaintances to react irrationally to particular topics or eventualities, but when they do we learn to adjust our strategies, just as, with a chess-playing computer, one sets out with a high regard for its rationality and adjusts one's estimate downward wherever performance reveals flaws. The presumption of rationality is so strongly entrenched in our inference habits that when our predictions probe false, we at first cast about for adjustment in the information-possession conditions ... or goal weightings, before questioning the rationality of the system as a whole.

A presumptive rule could be expressed as follows: The speaker wants to aim at a success of rational communication, that is, he avoids initiating distraction from the success of communication by providing

overloading or misleading information. A presumptive rule implies that sentences lead towards a communicative goal. A presumptive rule can be interpreted as a hermeneutic presumptive rule. Scholz (2001[2], 166f.) referred to Ullmann-Margalit (1983). She, and also Ullmann-Margalit and Margalit (1982), had worked on the idea of a presumptive rule as a guide of rational understanding and action more fundamentally. The presumptive rule is neither a rule to make a forecast on the communication action nor a commitment but rather is addressed to the hearer to guide his action, that is, the understanding.

According to central bank communication and language, such a presumptive rule is welcome because the central bank doesn't act for its own benefit. A presumptive rule is not to be interpreted as a commitment towards prospective decisions by the central bank. A presumptive rule steps beyond the ideal construction of principles of cooperation and associated maxims such as conversation principles. To guide expectations in the markets a central bank needs to guide the communicative interactions in order to secure the understanding of its decision-making procedures by the audience.

The presumptive rule is embedded in the history of, for example, a country, its experience, the central bank, and the economic situation. A presumptive rule supports the understanding of what has been said in direct speeches and in all modes of publications. The public presupposes the central bank to be aiming at a rational dialogue with the financial market. The public knows that the interest rate will fluctuate over time. The direct speech at a press conference provides only sentences with limited time horizons. But this is not a failure of language activity or a failure of the everyday language, but rather a key feature of the literal meaning of colloquial language in communicative interactions.

What are the presumptions according to the principles of cooperation, the associated maxims, and the economic context? The participants at the press conference expect the central bank to raise the interest rate immediately. They presume that the chairman uttered a true and relevant sentence, and that he was aiming seriously at the common goal of communicative interaction. It is important to judge beyond the literal meaning of the sentence in order to get an understanding of the sentence as embedded in practice. Without any coherent, relevant, or rational presumption about the circumstances, no understanding of press releases of the central bank, direct speeches, or statements are possible. The understanding refers to the standard of rational dialogue, hermeneutic principles, empirical assumptions about common responses by people regarding different information and circumstances.

Common responses or common reactions imply that people act rationally in order to achieve their goals, and they therefore avoid misleading information or language activities.

In contrast to the view outlined in the previous paragraph, the presumed reliance on a merely mechanical response or reactions or so-called reflexes will not lead to understanding. Only if the economic science still adheres to the naïve behavioural paradigm in economic theory, which has already been abandoned by other social sciences, is it possible to argue by way of such a mechanical response reaction analogy.

The term implicature is proposed as a cooperative principle which introduces the cooperative presumption, determinacy, and mutual knowledge conditions, but Grice left open how the implicature could achieve that rule as a cooperative principle. How should it be possible to achieve mutual knowledge and determinacy by a reference to the term implicature? The term implicature is not oriented towards a coordinative interaction since it only has a semantic role. Grice also stated that conversational implicatures can be worked out or inferred from conversational principles. The generative assumption, stating that the conversational implicatures are generated by and predictable from the satisfaction of those principles is not convincing, since Grice only proposed it as a premise. It is a failure to argue that conversational implicatures can be derived from, and explained by, conversational rules.

The theory of implicature provides a theory of rational dialogue or rational hermeneutics based on the hermeneutic presumptions Grice defined as conversational and conventional implicature. Grice's principle of cooperation and its associated maxims are subordinated parts of the overriding principle of rational dialogue. Davis objected to Grice's theory of implicature: 'In sum, Gricean theory fails because speaker implicature is a matter of intention, sentence implicature is a matter of convention, and neither is calculable from or generated by psychosocial principles. Conversational rules instead codify social goals motivating intentions and sustaining conventions' Davis (1988: 190).

Although I agree with the first part of that critique, the non-acceptability of the speaker's intention regarding communicative interaction, the criticism misses the point. Admittedly Grice did not succeed in stepping beyond the 'matter of intention'. The dominant figure in Grice's approach to communication and understanding still remains the speaker, which I do not find acceptable because it is based on the idea of the conduit metaphor and focused on information as linear transmission (see Chapter 2). However, if we appreciate the attempt to

integrate conventional and conversational implicature into the conversations principle as proposed by Grice – as, for instance, Scholz among other authors has suggested by reference to the function of a presumptive rule – then we could come to a further conclusion which, from my point of view, would be beyond the prepositions of logic ordered regularly in the diagrams of truth-possibilities and of truth-arguments.

I propose interpreting this conclusion as inductive reasoning, also implying the creation of meaning in the communicative interaction and, hence, in the context, which also includes to acknowledging uncertainty about the communicative interaction as a whole because of the use of everyday language. If, on the other hand, we assume that the implicature functions in a logical sense, we then have to presuppose that Grice had configured communicative interactions as a deductive system. My proposed interpretation, as outlined in the previous paragraph, contradicts two other ways of interpretation: The term implicature has been criticized in the literature by those who interpret implicature as deductive reasoning of a formal system by emphasizing that this contradicts the role of language and meaning as rooted in the context, circumstances, and trappings of a particular culture (Keller 1995). However, the term implicature has been accepted by those writers who support the view that communication is based on coded language and a certain types of behaviour.

Although Grice did not define the term implicature, it is possible to argue that it draws a kind of conclusion. Grice argued that since any utterance is incomplete regarding the speaker's intention as the whole, that is, the speaker's utterance provides only a part of the meaning. Therefore the incompleteness of the expression regarding its content leads to the implicature. The content of the communication which goes beyond the utterance itself has to be implied. We are now able to conclude that the theory of implicature restricts the supposed generality of the principles – a conclusion Grice did not make.

I now turn to draw some conclusions on Grice's view. He limited the proposed general rule-based approach to achieving a communicative success by way of his theory of implicature. However, he did not discuss the theory of implicature in its function as a restriction of that supposed generality. Grice discussed the principle of cooperation as a requisite to achieve the success of communication by stating that the speaker's capability of exploiting the mentioned principles and associated maxims will lead to success whereas the hearer will decipher the speaker's intention through the speaker's action. While Grice tried to implement a theory of dialogue, he failed to articulate how a dialogue

could be implemented. The speaker's intention determines the meaning and understanding. The speaker utters what he meant, and the hearer acknowledges what the speaker means by reacting in a certain way.

Although Grice referred to the speaker's intention, he did so not in the way that proponents of the theories of intentionality of meaning do. A particular feature of theories of intentionality is the idea that the intentionality of terms is related to a person. Dennett described it as an 'intentional stance' (1971). The relation to the person is linked with the intentional pattern of acting. The supposed ascribing of the intention to a person also implies certain assumed persuasions, wishes, expectations, and mental states of the person which are interpreted as particular reasons to act (see Brandom 1994). The difference between what the speaker 'means' with words or sentences and what he utters refers to theories of intentional systems (Kemmerling 1986). The demand for the speaker's framework is hardly acceptable for a theory of dialogue (Thomas 1995). It is hardly acceptable to identify the result of a communicative interaction as the speaker's intention transmitted to the hearer. In my view Grice's principles of cooperation and its associated maxims can be reread as principles of commitments.

To sum up this section: Searle defined 'conversational implicatures' as 'indirect speech acts' (Searle 1979, 30). Both Grice and Searle referred to the important aspect of why communication is understandable while the spoken sentence, the utterance, is incomplete. The differences between Grice and Searle emerged at this point. While Grice emphasized the importance of the speaker's intention, Searle focused on speech acts as a way of acting in communicative interactions. Grice's theory and Searle's 'speech act theory' can be reread as distinct theoretical approaches to a rational dialogue. Both imply a hermeneutic approach to communication, although they differ significantly regarding the role of speaker and hearer (Searle 1969). The use of language, that is, language activity or a language-game is at the centre of the question on how the meaning of a word evolves (see the next chapter).

One important consideration of this language approach is that every language-game is governed by the rules of life, that is, the use of language in the context and not by premises proposed by Grice. Therefore, rules are not external to the language-game. Such rules will derive their meaning within the language-game, that is, the communicative interaction and context.

One important result of the speech act approach to language, that is, to meaning and understanding, is that speech acts create institutional facts. Economic institutions – like other social institutions – are

designed, created, and configured by the language-based activities of society, which have to be acknowledged and accepted. Their existence depends on social acceptability and agreements. Economic institutions are created neither by natural procedures nor by ontological entities. Institutions have to be perceived for their existence, that is, they are dependent on social acceptability (Windeler 2001; Searle 1995). Institutional facts are defined neither by physical laws nor by physics.

According to modern language science and its founders, Humboldt, Wittgenstein, Austin, and Searle, we have to distinguish between ontological, or immanent, features and language constructed in the real world. I now turn to a different view proposed by Ariel Rubinstein.

4.4 Formal language versus everyday language

Rubinstein told us that the roots of his interest in language go back to his childhood, since he always wanted to understand the people's argument and talk, focusing on the link between formal language in model building, game theory, and everyday language. Rubinstein (2000, 3) wrote:

> I continued to explore formal models of game theory and economic theory, though not in the hope of predicting human behavior, not in anticipation of predicting the stock market, and without any illusion about the ability of capturing all of reality in one simple model. I am simply interested in the reasoning behind decision-making and in the arguments people bring in the debates. I am still puzzled, and even fascinated, by the magic of the links between the formal language of mathematical models and natural language. This brings me to the subject of this lecture – Economics and Language.

Rubinstein's book provides many examples of his interest in language as a focus of decision-making by economic agents, game theory, and the development of formal models in the game theory. He refers to current discussions of formal modelling and how to interpret this formalism in terms of daily language. He stated that formal models are not improved by a transformation into daily language or words of common use, because formal language is not expressly in everyday language. There exists a gap between both. Rubinstein referred to Grice's work as being about pragmatics, a branch of linguistic studies. Rubinstein wanted to construct rules for a cooperative communicative approach concentrated on the speaker's intention and his aim to influence the outcome of communication. In order to investigate the hierarchy between speaker and hearer in the light

of game theory, Rubinstein reformulated the central concepts and notions given by Grice. The term implicature, then, provided the key argument in Rubenstein's approach to the economics of language.

One main topic of economic investigation is social interaction in differently designed relations and economic systems. Rubinstein explained that all economic agents are acting on the basis of language capability, making decisions and forming judgments. This statement is beyond the trivial, since there is another player in economic theory, one who is accustomed to building mathematical models which are regularly interpreted by common language. This, importantly, 'derives from interpretation, which is expressed using daily language' (Rubinstein 2000, 5).

The focus of Rubinstein's interests is the development of formal model in game theory and its link to natural language. As he (2000, 5) puts it precisely:

> Much has been written on the rhetoric on economics in general; little however, has been written on the rhetoric of game theory. The starting point of the discussion is that an economic model is a combination of a formal model and its interpretation. ... I argue that the rhetoric of game theory is more 'useful' than it actually is, and that a better interpretation would make game theory less relevant than is usually claimed in the applied game theory literature.

By this reference to rhetoric, Rubinstein emphasized the distinction between formal models and language. Finally, for him language is part of formal modelling. He refers to Grice's work as an explicit contribution to game theory.

Two main questions are raised by Rubinstein to describe his approach to economics by language. Firstly: 'Why would economic theory be relevant to linguistic issues?' Secondly: 'Why would economic theory be a relevant subject of research from the point of view of language'? (Rubinstein 2000, 4). Rubinstein answers the first observation that economics deals with 'non-physical regularities in human interaction' which are based on 'natural language'. This notion was of great relevance for Grice and the understanding of the dialogue between speaker and hearer. Pragmatics has been influencing the theory of action, rules, and convention. Rubinstein (2000, 6) explained:

> Pragmatics searches for rules that explain the difference in meaning between a statement made in a conversation and the same statement when it is stated in isolation. Grice examined such rules in the

framework of a conversation in which the participants are assumed to be cooperative. Here, game-theoretical analysis will be used to explain a certain phenomenon found in debates.

In Chapter 3 of his book, Rubinstein outlines why the approach given by Grice is of relevance for this investigation of economic decision, debates, and structure within the framework of game theory analysis. To summarize his view: he supported the approach made by Grice. He interpreted the speaker's utterance as a signal which transfers information already given (Rubinstein 2000, 37). The way the hearer interprets the speaker's intention and how the speaker defines the assumptions addressed to the capability of the hearer are important factors for the understanding of an utterance. In game theory such matters as how an utterance would be interpreted commonly or be understood is to be viewed as an output of a game between speaker and hearer. Rubinstein stated that the only 'real phenomenon' of game theory is the term *debate*. A linguistic approach to game theory could provide more clarity on the linguistic meaning. For instance, the term 'debate' depicts a situation in which two persons do not agree and which provides a framework for them to explain themselves in order to possibly achieve an agreement.

Understanding refers to the complexity of the propositional attitudes of the speaker. Propositional attitudes express the speaker's intentions, opinions, expectations, experience, or thinking. It had been a long-lasting controversy in the literature as to whether it is possible to make a distinction between the meaning of a sentence or word and propositional attitudes.[11] For instance, in the 1950s Quine wrote a famous criticism of the traditional analytic/synthetic distinction, referring to the 'two dogmas' of empiricism. Later on, Quine overcame his previous view and regretted that in his early writings he had overlooked that it is not possible to set a border on meaning by semantic or linguistic rules, on the one hand, and by experience, on the other.[12] The results of an experiment have to be explained in sentences which are not created by the experiment itself. Moreover, there exist no particular experimental sentences or words which are developing with the experiment itself (Quine 1953, 1991). The experimental procedures and its results have to be expressed in public language.

Quine put forward a hypothesis of 'inextricability' by stating that it is not possible to differentiate between pure meaning independent of the praxis or the context in which the word is used and the propositional attitudes. 'Inextricability' emphasized the inherent connection among

meaning, context, and information. The implication of 'inextricability' can be understood if we consider how children learn the meaning of a word or a sentence. For instance, the word 'chair' is not learnt by looking into a catalog. The meaning of a chair is learnt by its use in practice. A child learns how to use the chair to sit or to stand on in order to enlarge its horizon. It learns how to put chairs around the table and how to move a chair in order to create another goal for its use in the context, or to remove the chair to change the game. It does not learn the meaning of a chair as a synonym for an object or piece of wood which possesses at least four legs. It is not possible to draw a rigidly fixed border between a so-called pure meaning and the knowledge of the use of language 'chair'. There exists no pure theory of the meaning of words or sentences beyond the practice of the language in use (see Chapter 5).

Quine later followed Wittgenstein's and Humboldt's research, accepting that there exists no boundary between the sentence which describes an experimental result and the sentence which refers to the theory. Nowadays, the dogmatic view of a dichotomy of experimental or empirical versus theoretical sentences is no longer relevant.

The consequence of the abandonment of this analytic/synthetic distinction was the acceptance of holistic and hermeneutic approaches to meaning. These approaches to meaning imply the acknowledgment that there is no boundary to be drawn between different kinds of sentences in describing data, observations, experiments, information, meaning, opinion, or utterances. For example, Davidson, who adhered to Quine's later view, argued that for the sake of a coherent interpretation of the speaker's utterance we have to recognize the conditions the person has taken into consideration to assess on the truth of a sentence. There are two factors to be mentioned: the beliefs or persuasions of that person who decides and the meaning of a speaker's utterance. Which persuasions, beliefs, and meaning (opinion) we are going to credit to a person depends on our *interpretation* of the speaker's utterance. Davidson applied the holistic view to his theory of 'radical interpretation'. Our interpretation of the speaker's utterance also depends on the meaning or opinion we have attributed to him or her. A particular characteristic of the holistic view of meaning is that all theories of meaning have been evolving against the background of scholarly experiences. Therefore, if this experience and the explanatory power of an analysis contradict the theory, one has to asses which elements of the theory must be revised or rejected.

4.5 The use of language as coordinative acting

> This is so much the conventional way of thinking about language that it is sometimes hard to imagine that it might not fit reality. (Lakoff and Johnson 1980, 459)

The discussion on central bank communication refers to 'convention' or the coordinative function – the coordination channel of communication (see Amato et al. 2003) – in order to try to explain why language matters in the economy. As was outlined in the previous section, Grice (1989) also stated that conventions imply 'what users of the sign do mean'. This brings us to Lewis's contribution, which at the initial stage of the debate provided a conceptual view on convention (Muchlinski 1998b). Lewis (1969, 2) objected to the view that convention and language are connected in a particular way:

> It is a platitude that language is ruled by convention. Words might be used to mean almost everything; and we who use them have made them mean what they do because somehow, gradually and informally, we have come to an understanding that this is what we shall use them to mean. ... To say only this is not to say much.

Lewis thus tried to explain how and why conventions evolve and what role is left to language. Lewis (1969, 2) also objected to the view that conventions are based on agreements:

> We have no concept of convention which permits language to be conventional (ibid). ...
>
> The conventions of language are a myth. The sober truth is that our use of language conforms to regularities – and that is all.

What are the roots of conventions? Lewis argued that conventions are modes of regularities of behaviour. Lewis referred to different means by which different people aim towards a common goal. Such efforts should be called communicative interactions. Given the assumption that the use of language conforms to regularity, Lewis assumed the 'use of language belongs to a class with a conspicuous common character: situations I shall call *coordination problems*' (Lewis 1969, 5). Lewis outlined that any social interaction implies a communicative action as a form of coordination, hence the use of language concerns coordinative actions.[13]

To be brief on this premise of Lewis, conventions arise out of the regularity of people's behaviour. The coordinative interactions are a kind of communicative action. They are the means of a coordination game in

terms of the game theory approach. Lewis, then, defined a coordinative action as based on common interests to serve common purposes. The assumed common interests lead to a further premise of the rationality of coordinative acting. For instance, agent (A), then, expects a common interest with agent (B) and, hence, is willing to coordinate and interact with (B). This assumed coincidence of will also implies the coincidence of the expectations of (A) and (B). This premise is required for realizing the common goal of communicative interactions, that is, in terms of Lewis's view, the coordination. Lewis (1969, 6–7) illustrated his approach to convention by the following examples, referring to Hume's *Treatise on Human Nature*:

> Suppose you and I are rowing in a boat together. If we row in rhythm, the boat goes smoothly forward; otherwise the boat goes slowly and erratically, we waste effort, and we risk hitting things. We are always choosing whether to row faster or slower; it matters little to either of us at what rate we row, provided we row in rhythm. So each is constantly adjusting his rate to match the rate he expects the other to maintain.

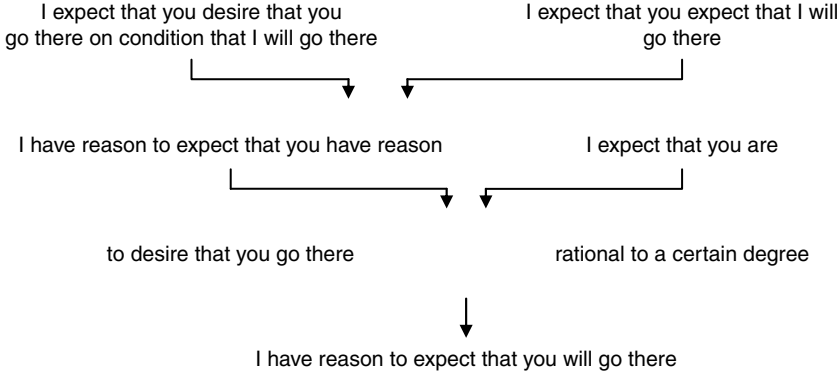
Lewis discussed examples with more than two people: for instance, campers in the wilderness or a car driver on the road. The involved agents will be only successful if they acknowledge their dependencies by working on a coincidence of common interests and also the coincidence of will, expectations, and goals. Since Lewis denied that conventions are based on an explicit agreement in advance, he went on to expound that any pattern of the coordinative interactions is based on the regularities themselves. These regularities of behaviour work like a natural force. It is the rule which guides the agents through the game in order to fulfil their common interests. Lewis, then, defined common interests of the agents and the emergence of a congruent goal, the coordination as an equilibrium referring to the principles of game theory (see Lewis 1969, 14). A common purpose requires coordinating the actions of agent (A) and agent (B) regarding their mutual expectations. A coordination problem, then, exists in a case of distinct alternatives of actions. Lewis defined a coordination problem as follows:

> Coordination problems … are situations of interdependent decision by two or more agents in which coincidence of interest predominates and in which there are two or more proper coordination equilibria. (Lewis 1969, 24)

Decision-making is not required in cases of common interests. The presumption of common interests implies the double coincidence of wants. Lewis assumed that coordinative acting will be better the more it is based on mutual expectations of both agents (A) and (B) or among a group of agents respectively. This assumption serves the readiness of the agents to build up 'concordant mutual expectations' (Lewis 1969, 25). Lewis gave the following example: 'I may go to a certain place because I expect you to go there, while you go there because you expect me to' (ibid). What is needed, then, is an agent's confidence in the expectation-building process in which she or he is involved and the certainty that she or he expects the other agents to be involved, too. The involved agents are motivated by their common interests, expectations, and confidence, hence motivated by the behaviour of others. At this point the common knowledge assumption comes into consideration again. As is already outlined, the common knowledge assumption has a prominent place within economic theories. This presumed strong interrelation of the agent's expectations can be described as the expected expectations of all expectations.

> I said earlier that coordination might be rationally achieved with the aid of concordant mutual expectations about action. ... Coordination may be rationally achieved with the aid of a system of concordant mutual expectations, of first or higher orders, about the agents' action, preferences, and rationality. (Lewis 1969, 33)

This first order is illustrated in Figure 1:



A coordinated solution of an interactive process among different agents is provided by the recognition of mutual expectations. It is a replicate process of reasoning with one's own knowledge and beliefs based on different orders of assessment and reasoning. Lewis described this assessment as 'a process in which *one* person works out the consequences of his beliefs about the world' (Lewis 1969, 32).

To assess the expectations of others requires considering one's own expectation in relation to other agents' views. This is not an easy task, but can be accomplished by a mechanism. As Lewis (1969, 27) pointed out:

> If I know what your believe about the matter of fact that determine the likely effect of your alternative actions, and if I know your preferences among possible outcomes and I know that you possess a modicum of practical rationality, then I can replicate your practical reasoning to figure out what you will probably do, so that I can act appropriately.

This replication of a person's reasoning is based on the mutual interdependence of actions and the mutual expectations of the agents. Lewis, then, tried to strengthen his argument of a coordinating acting. How can agent (A) reach the point of a certain confidence in the behaviour of agent (B)? It is rational for agent (A) to get as much as information as possible about the prospective actions and the underlying expectations of agent (B). This information will serve as a guideline to orient his own actions and expectations of (B). Lewis focused on the interrelated procedure and mutual perception of expectations of (A) and (B), and also on implications the 'expected expectations' of the other agent regarding one's own expectation might have. This coordination approach can be described as a cognitive and acting procedure. Person (A) has to find out what person (B) expects him or her, that is, person (A) to do. Therefore person (A) needs to figure out the information in order to solve the coordination problem. Any reasoning by person (A) about the other person's (B) expectations or beliefs or actions will be replicated by person (B) and so on.

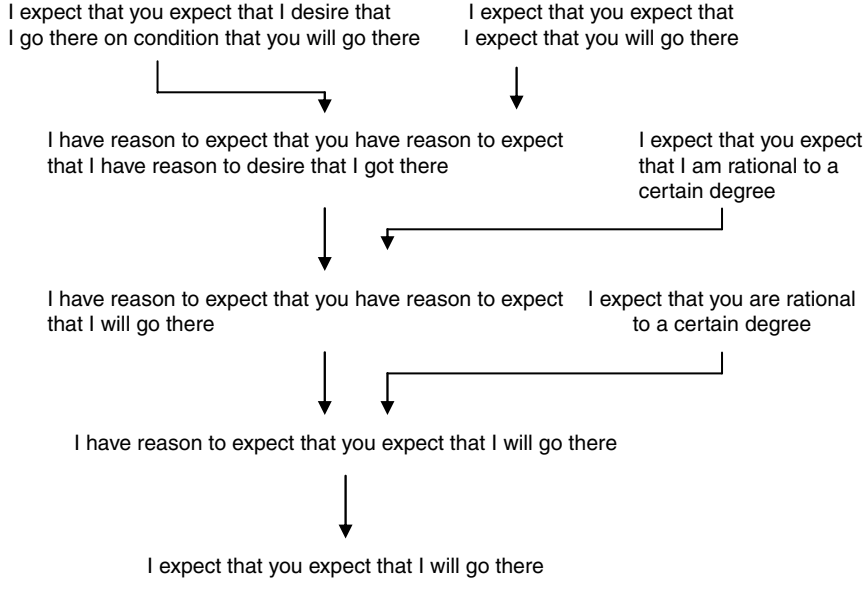
This procedure of mutual recognition cannot be modelled as a linear causality. The consequence of this is: person (A) might expect person (B) to try to replicate the attempt of (A) to replicate the attempt of (B) to replicate the reasoning of (A). Therefore the chain of reasoning or the mutual process of replicate reasoning will not end after person (A) expects person (B) to realize something. This process of reasoning about the reasoning and also about the ongoing replicate reasoning of others will continue before it has to be stopped by decision-making. Lewis (1969, 28) stated:

> Before things get out of hand, it will prove useful to introduce the concept of higher-order expectations, defined by recursion thus: A

first-order expectation about something is an ordinary expectation about it. An (n +1)th-order expectation about something (n>1) is an ordinary expectation about someone else's nth-order expectation about it.

Lewis described the mutual recognition of mutual expectations as a process of balancing different phases of judgment and reasoning according to the capacity to work out information and unambiguous perceptions. It is a procedure to discover the unambiguousness of a given situation. Furthermore, it is the evaluation of expected-expectations as a kind of rational reasoning. This premise of rational reasoning does not impose the commitment to act rationally, but rather it provides the possibility that agents will be able to understand. This process of replicate reasoning is not a back–and-forth linearity between two persons. Moreover, the process of reasoning is an outcome of 'a process in which one person works out the consequences of his beliefs about the world' (Lewis 1969, 32).

The high-order expectation or the replication of person (A) of the replication of person (B) is sketched in Figure 1 (ibid, 29–30): Person (A) expects person (B) to expect (A) to go to a certain place to meet one another. The expectations of (A) according to (B)'s expectations arise out of the procedure of the replicate reasoning of (A). With respect to Figure 1, Lewis stated this comparison is only perceivable as an



approximate one and, hence, as a consequence of acting. Therefore agent (A) will be able to build up a hierarchy of both his preferences and of (B)'s preferences, including the underlying rationality of both acting. The coordination problems can therefore be solved by the effort of concordant mutual expectations of actions. 'Coordination may be rationally achieved with the aid of a system of concordant mutual expectations, of first or higher orders, about the agent's actions, preferences and rationality' (ibid, 33).

What role is left for circumstances in Lewis's thinking? Circumstances serve as a framework to judge the expectations of other agents. Agent (A) assumes that (B) will act like he or she acts. However, circumstances indicate merely a certain pattern of regularity of behaviour. Lewis argued that the better the circumstances are perceived by the agents the more they will support the agent's procedure being justified in forming mutual expectations. The premise of perceiving another's expectations also implies the perception of one's own expectations. Lewis explained the process of judging one's own expectations and preferences, as well as grasping the expectations and preferences of other persons, as a concluding argument. The knowledge of conventions is linked to modes of actions. The coordinative process implies that conventions are to be perceived as a shared or 'common' world.

Lewis explained 'common knowledge' as a state of affairs. He defined common knowledge as the requirement, that is, as a constituent for any successful coordinative action (Lewis 1969, 61). To Lewis, the common knowledge assumption is constitutive for the evolution of conventions. Moreover, it provides a strong prerequisite needed in order to achieve the common interests of both agents (A) and (B) or group agents.

According to the common knowledge assumption and the definition of conventions as a regularity of behaviour, agents guide their present solution based on the knowledge of comparable problems of coordination and its successful solutions (see Geanokoplos 1992, 54). Interacting, coordinating, and aiming at a common goal are based on common knowledge and regularity of behaviour. This premise of conformity is literally renewed in any action and interaction iteratively. Lewis assumed that our knowledge of analogies motivates the regularity of our view of other agents, their expectations, preferences, and modes of acting. As assumed by Lewis (1969, 41), taking note of these regularities of behaviour supported a general premise:

> We come to expect conforming actions not only in past cases but in future ones as well. We acquire a general belief ... that members of a

certain population conform to a certain regularity in a certain kind of recurring coordination problem for the sake of coordination.

The explanation of the evolution of a convention now is clear: it is the recurrence of past events or the 'conspicuous analogy' which stabilize our expectations. Since all agents rely on this precedent of stabilized expectations in future situations, such a regularity of behaviour works as a stabilizing rule. 'Our defining conditions for the existence of a convention consist of regularity in behaviour, a system of mutual expectations, and a system of preferences' (Lewis 1969, 58).

How is it possible to perceive the expectations of other agents? In Lewis's view, the expectations, willingness, and preferences are perceived by acting. Common patterns of perception lead to a common procedure of building expectations, which conforms to a certain pattern of regularity of behaviour. Knowledge which enables agents to act is defined as knowledge of acting. Lewis stated that such capability should be seen as knowledge proper. His statement that 'knowledge (is) confined to particular instances' sheds light on an important implication of his approach to convention, because following a convention is only applicable to a particular situation and not to be understood as a general rule. The concept of convention encompasses the situational approach. The consequence is that 'any convention is arbitrary because there is an alternative regularity that could have been our convention instead' (Lewis 1969, 70).

Agents have to decide which convention should be chosen regarding the situation. Lewis (1969, 78) defined convention as follows:

Box 2

A regularity R in the behaviour of members of a population P when they are agents in a recurrent situation S is a *convention* if and only if it is true that, and it is common knowledge in P that, in almost any instance of S among members of P,

(1) almost everyone conforms to R;
(2) almost everyone expects almost everyone else to conform to R;
(3) almost everyone has approximately the same preferences regarding all possible combinations of actions;
(4) almost everyone prefers that any one more conform to R, on condition that almost everyone conform to R;
(5) almost everyone would prefer that any one more conform to R', on condition that almost everyone conform to R', where R' is some possible regularity in the behaviour of members of P in S, such that almost no one in almost any instance of S among members of P could conform both to R' and to R'.

What does a 'recurrence situation' mean? It is to be interpreted as a situation in analogy. The reference to the population (P) in the above definition makes clear that any possible ambiguities and discrepancies are not expected to be great ones. Lewis sketched a common background of society for the agents in interactions. It includes a kind of common pattern of perceptions and actions. The term convention gets its meaning by its uses in different contexts.

The pattern of perceptions and the modes of interaction are guided by the conventions of a certain population and context. This particular context and the involved population give place to the use of language in actions. As Lewis (1969, 177) explained:

> We are trying to find out what the members of a population P must do in order to make it the case that a certain possible language *L* is their actual language – that they use *L*, in the sense we are after. It is surely something they do in conformity to a convention: something everyone in *P* does because he expects his conversational partners in P to do it too, and because a common interest in communication leads him to want to do his part if they do theirs. This much we know, just because we know that it matters little (in the long run) which language we use, so long as we all use the same one.

Lewis linked contexts, people and language. Lewis's model provides an explanation of the evolution of convention and how it takes place within a group of agents. With respect to the function of the population, one can argue that Lewis gave place to the meaning according to different situations and actions.

Nevertheless, the functions of language are not explicitly expounded in his model. As the quotations at the beginning of this inform us, in Lewis's view language emerges to solve a problem of coordination. Lewis described language as a medium of transporting information or signals from the sender to the receiver. He presumed the identical sense or meaning of any sentence. To put it more precisely: the agents exchange a given meaning. This contradicts the supposition of arbitrary convention. Lewis explained the success of communicative interaction as the outcome of any speaker's utterance. In his model of communicative interactions, the language of conventions is interpreted as a regularity of behaviour in order to develop the speaker's utterances, which guide the reactions by the listener. Lewis, then, maintained the success of the sender-receiver relation regarding the intention of a successful cooperation.

Here we find the analogy to Grice's concept of meaning. Like Grice, Lewis developed his notion of convention on the basis of a model of acting. Thus the actions can be viewed as a mirror of both the intentions (Grice) and the expectations (Lewis). Lewis, then, elucidated that actions are often done with definite intentions. An agent's intention can be reconstructed by the action of this agent. This brings us to the key aspect of Lewis's model: conventions provide a reliable pattern of behaviour.

Any communicative acting resembles different expected patterns of behaviour of different agents that can be interpreted in a conventional way. Within such a situation the expectation of behaviour relies also on communicative, social, and grammatical modes. Therefore, it is not possible to argue that the implementation of a communicative action is identical with following a regularity of behaviour. The success of communicative actions depends not on an exchange of given meaning, but on the evolution of the meaning through communicative acting. While the communicative action is a certain feature of the complexity of language-games the communicative action itself cannot be interpreted as driven by regularity in behaviour – a convention – as defined by Lewis.

Lewis tried to expound on the evolution of a convention regarding the mutual recognition, interest, will, and expectations of the involved agents. Lewis failed to explain how the listener's understanding could be based on the conventional approach. In the end, the listener's understanding is determined by the speaker's intention. Lewis followed the traditional theory of communication and the 'conduit metaphor'. Lewis did not explain the functions of language. Both speaker and listener have to assess the signs, symbols and words because there is no objective meaning of signs, symbols and words. The language itself works as a mode of coordination. Lewis also stated that a population chose a language. This is not convincing, since language is not a commodity or thing which can be chosen to be consumed.[14] At this point I should ask: What role is left for language in Lewis's model? What does it mean for language to conform to regularities? Language is a verbal signal. Any coordinative acting is based on communication. Lewis stated: 'A population's common use of some one language ... is a convention' (1969, 49). It does not matter in which language person (A) and (B) communicate so long as both use the same language. Davidson (1998) objected to this hypothesis by stating that understanding does not root itself in a shared language.

Lewis stated that the wish to be understood leads directly to 'media of exchange'. He referred to economic discipline and explained that

the coin of a particular realm is such a medium of exchange. How had the acceptance of that coin as a medium of exchange been achieved? Lewis argued that the acceptance of a medium of exchange is rooted in our conventions. We would accept this medium as a mode of return or reciprocity. It is obvious that acceptance is not given by the object, the coin, but rather by a state of confidence. Lewis agreed that it is certainly not a convention to use a language. Using a language is a convention and, therefore, a regularity in behaviour. A convention does not guide the behaviour of the population in every detail, but rather a convention restricts behaviour. 'Here I will say only that it is a regularity restricting one's production of, and response to, verbal utterances and inscriptions' (Lewis 1969, 51). He stated, 'conventions are like fires: under favourable conditions, a sufficient concentration of heat spreads and perpetuates itself', that is, a convention is a regularity in behaviour (Lewis 1969, 88). If a population has the choice between two possible languages, it follows from this that 'it must be by convention that a population chooses to use one or the other', concluded Lewis (1969, 50). In my view, Lewis missed the point of the use of language. It is not possible to choose a language like an apple. His view that 'language conforms to regularity' denies the constitutive role of the use of language in practice. It is for this reason that Lewis's view is not an accurate approach to central bank communication.

5
Language, Expectations, and Circumstances

> Our talk gets its meaning from the rest of our proceeding.
> Wittgenstein 1979, § 229

In this chapter I would like to provide an introduction to language as opposed to a coded language. This chapter tries to show why understanding matters to central banking. According to modern central bank literature, the genuine task of a central bank is to steer market expectations. Since expectations and the expectation-building process are not to be regarded as mental states but rather as articulations (utterances) configured by language-based interactions in different circumstances, central bank talks matter. However, expectations are neither linearly determined causal responses to stimuli nor causal connections to disclosed information. Economics, as a social science and as institutionalized procedure, is not based on causality as is typical for mechanical stimulus-responses. This is also true regarding understanding.

As we have seen in the previous chapter, Grice presupposed that meaning is analogous to the intention of the speaker. Moreover, as a general rule he differentiated between the meaning of the speaker and listener. The 'standard meaning' is seen as abstracted from communication interaction, that is, it is not based on social interaction but rather incorporated in symbols, signs, and words. Although Grice tried to step out of the classical theory of meaning with the term 'act-object-ambiguity' – that is, meaning as incorporated in mental states, intention, or in an object itself – he remained focused on the speaker's intention because he emphasized intention as an analogy of speaking and acting. As Grice stated, the 'effect' of a communicative acting should be ruled out by the listener. The listener has to reconstruct the speaker's intention.

Lewis demanded a rule or convention, such as common knowledge, for communicative interactions. Lewis stated the common knowledge assumption is necessary as a rule both to coordinate and to create a convention. Language acquires its role through 'conforming regularities' of behaviour and, hence, understanding is seen as rule-following. The aspect of understanding has been neglected by both Grice and Lewis. From my point of view it is not beneficial to rely on rules or a coded language, since understanding is neither a result of a stimulus-response mechanism nor of deciphering. A coded language could probably work within a stimulus-response mechanism among agents and machines in order to set a machine in motion. However, such a stimulus-response mechanism is not a model to capture and understand the communicative interaction between a central bank and agents of the financial markets. The analogy of human behaviour to a machine misses the point of economic interactions in the financial markets, not only because of the different time horizons but also because of the interdependency of these actions according to monetary policy being worked out through markets.

The view to set agents in motion by a coded language, like a struck billiard ball, is misleading. To understand how monetary policy works through markets, one needs to acknowledge the processes perception and understanding of the central bank talk and communication within markets involving many different agents in different markets. Any attempt to guide market expectations by a coded language implies a risk of a significant disappointment of such agents if, for instance, the central bank has to change its policy in response to the changing circumstances, that is, changes in the context and environment. The more a central bank tries to avoid such misunderstandings through a commitment to communication via a coded language, the greater will be the risk of generating misunderstanding among market agents.

To acknowledge understanding as part of the communication strategy implies stepping beyond presumptions about the intention or mental state of the speaker. Understanding cannot be conceptualized as rule-following. Rules must be applied to something, such as 'the rules of car-driving'.

Understanding is not to be reduced to deductive or inductive reasoning – those procedures based on certain regular features. As a judgment at hand, it does not follow procedures of decoding or a cybernetic exchange of information. It is an attempt to come to terms with a problem or event.

Understanding – also degrees of understanding – are an epistemic consequence insofar as I am changing my knowledge about circumstances

immediately. I cannot interrupt the understanding. Understanding is not a mental status but rather an ability to participate in circumstances differently. However I could maintain not understanding anything. Understanding is hypothetical or inferential reasoning. Understanding is related to the complexity of sense or context, which includes knowledge of the world and acting, which means participation in a shared practice. This shared practice encompasses also the knowledge of others whom I perceive in communicative interactions. Keynes explained it as an 'average opinion' (see Section 2.3.2). Wittgenstein (1983, 334) described it as participating in a 'language game' by articulation: 'A game, a language, a rule is an institution.' A language-game is an appropriate concept to capture and describe the communicative interactions between a central bank and financial markets.

I am going to explain why, according to Analytical Philosophy and modern language science since Vico, Herman, Herder, Humboldt, Kant, and Wittgenstein,[1] the meaning of utterances or articulations are inherently embedded in the communicative interactions, hence in their context (Muchlinski 2006).[2] Their view does not support the approaches Grice and Lewis had proposed. The meaning of signs, symbols, and words is not rooted in itself. It is impregnated by its use in different circumstances. From the view point of Analytical Philosophy, the intention is not the sum of the mental state of an individual. It is to be seen as the realized action. Therefore action is perceivable as activity or communicative interaction respectively; there are no two things like (a) intention and (b) action.

As Humboldt (1836/1998) explained, on the basis of his comprehensive language studies on the differences in world languages, language is '*Thaetigkeit* [*energeia*]' activity (Trabant 1986). Language as activity implies that the meaning is embedded in different patterns of language in action. Language is not a label for mental states, intention, or thoughts because language is not neutral towards meaning. Humboldt et al. have revolutionized our view on language by emphasizing that language has a constitutive function in the creation of meaning and circumstances. In contrast, the traditional philosophy presupposed the (speechless) 'idea of mind' (Aristotle, Locke), and that mental states, intentions, or thoughts are created independently of language. According to this view language works as a symbol, sign, or word and has the function of post-labelling thoughts, intention, or mental states. Thinking comes first, speaking follows.

However, as the criticisms of Analytical Philosophy go, single words, symbols, or signs do not configure the meaning because it is the

surroundings of a communicative interaction and the structured relations of the words in use which create the meaning. It is contradictory to assign language a constituent function and simultaneously assign the description of the world to words or concepts as images. Wittgenstein developed Analytical Philosophy further, and this has been accepted in the modern view of language science (Günthner and Imo 2006; Fiehler et al. 2004). He related everyday language to 'forms of life': 'To imagine a language means to imagine a form of life' (Wittgenstein 1978, § 19).

> Meaning is not a process which accompanies a word. For no *process* could have the consequences of meaning. (Wittgenstein, *PI*, II xi, 218)

A word does not acquire its meaning as an isolated or illuminated point. As was said in the introduction, the use of a sign, symbol, or word gives life to it (Wittgenstein *PI* § 432). However, the current research on central bank talks and communication looks to the use of single words or code words in the speeches, minutes and publications of central banks in order to decipher the meaning of the information (Berger, de Haan, Sturm 2006).

Let us pause here to consider economic circumstances: how are they created? Let us consider for instance the financial crisis which started at the end of 2007; it can hardly be denied that many of the so-called financial 'products' in question – a variety of derivates which contained the promise of future earnings – a promise of payment, (see Akerlof and Shiller 2009) – were created by the use of language; they were not ontologically supplied as things. However, it was possible to create these financial products within certain economic environments through certain communicative interactions, based on certain expectations, beliefs, persuasions, or, as Wittgenstein would have described it, as 'language-games' among the agents in markets. Keynes also described language-games in economics:

> For it is, so to speak, a game of Snap of Old Maid, of Musical Chairs – a pastime in which he is victor who says 'Snap' neither too soon nor too late, who passed the Old Maid to his neighbour be fore the game is over, who secures a chair for himself when the music stops. The games can be played with zest and enjoyment, though all the player know that it is the Old Maid which is circulating, or that when the music stops so me of the players will find themselves unseated. (1936, C.W., VII, 156)

Communicative interactions create economic circumstances and, hence, 'economic facts and fictions'. Central banking as acting through markets needs to recognize the epistemic presupposition of a successful

communication. A central bank has also to acknowledge the constitutional conditions of the knowledge of participants in the markets or the knowledge of the society. This includes the history of the use of its key terms and concepts. A central bank's action in financial markets is embedded in its historical experience, as King (2004) explored in his studies of central banking, money, and inflation in Japan and Brazil.

5.1 Benefits and risks of a coded language

This section deals with certain characteristics of a coded language, its benefits and risks. I would like to give a short summation of some important questions and answers here: What is, after all, a coded language? Certain characteristics of coded language will be explained and the term itself defined in the following paragraphs. Where does the meaning of a coded language come from? It results from a defined rule. What is the implication of making reference to a coded language? The implication is the presumption that circumstances do not change and that the meaning is incorporated in symbols, signs, and illuminated words. Does a language code simply rule how to react to a stimulus? Yes.

Recalling the example of the car and car driver, it is possible to imagine setting certain limits in order to define the context of car-driving. It is also possible to define it by making a list containing all the elements contained in that context: roads, maps, cars, light, rules of traffic, wheels, steering wheels, spark plugs, fuel, and so forth. As this example indicates: A coded language is rooted in an exact definition and in a defined area or field. There is no vagueness or ambiguity in its meaning. A coded language can be explained by a list of all the distinguishing marks or features which provide an invariant context and situation. The meaning of a code is given ahead of its use. A coded language maintains a sense by itself regardless of any further interactions between the authors, agents, or institutions. A coded language is incorporated as a fixed rule or in a logical structure which is itself defined independent of changing environment and context. It is like the traffic light based on the simple rule. It does not create specific institutional facts or respond to their changes. A coded language is rooted in a certain system of definition. It makes sense to use a coded language in an invariant environment composed of and, indeed, designed using mechanical rules. A coded language – like the instructions on how to use a car or a machine – can in effect only be anchored in an invariant environment – for example, regardless of whether one drives on the left or the right. The context of an instruction on how to use a car is stable.

The car is defined by certain mechanical properties. Instruction on how to understand a coded language in order to get a driver's license demonstrates how the use and understanding of a coded language differs from everyday language. This generates a particular behavioural pattern which is necessary to avoid crashes of cars by establishing a strictly regular order applying to car drivers. A coded language is not embedded in a history, or at least not in one which reflects the dynamic, ever-changing and newly conditioned interactions. A coded language is not, in that sense, an echo of past events. Since a coded language is not rooted in interaction and practice, it is an artificial language. Words separated from a particular environment or set of environments lack any useful meaning. Here we can see the reason why a coded language is free of ambiguity and vagueness, which seems to be beneficial for economics and central banking because of their particular methods, which focus on quantifying, measuring, and forecasting.

Considering the essential characteristics of the modern view of central banks working *through* markets, how then could a coded language be a link between heterogeneous agents and the central bank? The problem of a central bank's talk based on a coded language is pointed out by Issing (2005a, 70):

> Code words can be readily identified and taken into account in market operations; they can reduce uncertainty in the run-up to meetings of the decision making body, and they can help to avoid errors in the short-term planning of operations and curb the volatility of interest rates. However, with the use of such code words, the central bank puts itself under pressure to honor a quasi-promise.

Karen Johnson, on the board of governors of the Federal Reserve System, argued that central banks need first of all to create a 'communication language. Currently, they tend to use very few words, often seen as coded language' (2001, 96). Johnson explained the problems which arise out of the use of a coded language:

> When these words seem to work with the target audience they are used over and again. But then, if the words differ only a little bit from one time to another, they may be mistakenly interpreted as a policy change. (2001, 96)

Indeed, the risks of a coded language are evident. Any conditional announcement regarding future decisions and actions implies both the

eventual necessity, and thus the risk, of a self-commitment with the consequence of greater inflexibility in action and reaction by the central bank. This reduced freedom to act and react also implies the risk of disappointing the market agents. Where a redirection of monetary policy is required, a central bank's announcement based on a coded language has, in any case, to be explained ex post facto in everyday language. A coded language which has to be explained subsequently in everyday language is not credible. People will not trust in it. Moreover, this reinterpretation diminishes the credibility of the central bank because its efforts to translate the coded language into everyday language will fail. In the light of modern central bank theory and according to the selective FOMC transcripts introduced in this book, we could argue that communication 'as the heart of both accountability and transparency' (Blinder and Goodhart et al. 2001) must be based on everyday language. A thorough and complete evaluation of the FOMC transcripts of the Volcker era will broaden support for this.

Any announcement or statement of the central bank can only be understood as an announcement regarding the mandate the central bank is aiming to carry out. A conditional announcement also points to particular eventualities governing a central bank's prospective actions not yet known. Since market actors tend to look for particular hints in order to make their own decisions, a coded language will in fact increase the problem of the central bank's inflexibility to alter its own decisions. An example is the abandonment of signal codes the European Central Bank declared in May 2007.

As I showed in Section 4.5, Lewis emphasized the characteristic of language as a rule with the statement *'language conforms to regularity'*. Admittedly, the creation of a rule of car-driving could be seen as an example of such regularity by language. The rule of car-driving will achieve its acceptability, not through the public's acceptance and acknowledgement, but simply by the mechanical procedure or by a specific DIN-norm. At this point any further analogy comes to an end. Car-driving – or using a machine – is not identical with creating a rule as a result of social interactions. We have to distinguish between rules which have been created socially that can be defined as institutional rules, on the one hand, and rules which conform to regularity, on the other hand. If we recall Lewis's view, he defines language-based acting as a rule and, hence, as convention. However, according to Habermas we need to differentiate between the social acceptability and validity of rules and rules based on mechanical analogy. Since language rules do not exist ontologically compared with something like a car, a

hermeneutic interpretation of language rules is needed (Scholz 2001). Acting as social acting in different circumstances is not directed in its meaning ahead of its use by focusing attention on existing rules listed in a catalogue. Social acting in different circumstances is not comparable with car-driving on different roads in different countries.

There is no doubt that a coded language can guide reactions in particular directions; for example, it can induce so-called iterative movements. A good example is the well-known metaphor of a 'run on the bank' (Bagehot 1873) which is, in effect, a self-fulfilling prophecy, and has caused many bank crises. There exists no doubt concerning the dangers of a situation in which coded language may guide mass behaviour, as the history of communication has shown (Lasswell 1935, 1948).

Whereas economic data always provide their own ambiguity, as chairmen Volcker and Greenspan emphasized, Chairman remark concerning the empirical findings seems to confirm the uncertainty. The chairman remained reticent when the data could not be read as a certain unambiguous description. The risk is evident that statements by the Federal Reserve Bank accompanying the interest rate move could lead to some unsettling signals in the long run. With uncertainty in the landscape, central banks – like other institutions – need to be anchored. The uncertainty would be intensified by the use of a coded language.

One particular benefit results from the assumption underlying a coded language: that the future of financial markets or the economy in general is capable of being conceived with greater clarity and less – or indeed no – uncertainty. The coded language appears to open an opportunity of interpretation by following a clear and unambiguous road map on the highway towards financial success. A coded language appears as a sure guide towards the best choice among financial or economic opportunities directly and, hence, supposes certainty in a world of uncertainty. This is illusory. From a car-driver's point of view, the end of his or her road indicates either the success of the way selected or at least its partial success. The expectations addressed towards the use of the coded language in central banking must, however, fail because the language activities of communication, meaning, and understanding are a complex task.

The presumption of a pregiven meaning of a word or sentence is, however, without doubt problematic, since the meaning is rooted neither in the intentions of the agents, nor in invariant situations. The classical view of communication neglects the functions of language, which is deemed to be neutral and, hence, a label, and communicative interaction as a principle for organizing and systematizing the ambiguity

which cannot be eliminated. The classical view of communication contradicts the modern view of language and cognitive sciences.

To achieve a meaning a word must be used several times in different contexts, practices, and circumstances. A coded language can not provide such a continuum of uses. If central banks try to act on the basis of a coded language they would adapt a given meaning of sentences independent of the context and the culture. This contradicts sharply the continuity of changing circumstances, contexts, and environments and therefore information as being subject to relationships. Moreover, it is meaningless regarding monetary policy strategy and the mandate of a central bank. In contrast to a coded language, language in use is neither a number nor a calculus which can be measured, weighed, and counted in order to give meaning to it. As Wittgenstein (1978 § 81) explained:

> We often compare the use of words with games and calculi which have fixed rules, but cannot say that someone who is using language must be playing such a game. – But if you say that our language only approximate to such calculi you are standing on the very brink of a misunderstanding. For then it may look as if what we were talking about were an ideal language. As if our logic is so to speak, a logic for a vacuum. – Whereas logic does not treat of language; and as if it took the logician to shew people at last what a proper sentence looked like.

An ideal language or language as symbolism is not appropriate for the need of understanding as Wittgenstein (1958, 25) explained:

> When we talk of language as a symbolism used in an exact calculus, that which is in our mind can be found in the sciences and in mathematics. Our ordinary use of language conforms to this standard of exactness only in rare cases.

If this premise of non-ambiguity and non-vagueness bears relevance it might seem to be the best method for a central bank to communicate with different agents in the heterogeneous financial markets. The non-ambiguousness and exactness of a coded language should lead to an understanding without being in any way misleading. It also defines the mechanism of understanding in order to avoid a discontinuity of understanding or a discontinuity generated by misleading elements. Therefore, in a coded language vagueness and ambiguity of meaning

are excluded by definition or by deductive reasoning. Furthermore, the assumption underlying a coded language implies the maintenance of a correspondence of objects with their names and properties as unique, clearly defined, exactly measurable and, hence, objective and true.

After this short review of the risks and benefits of coded language, I would like to raise the question of why precisely a coded language restricts a central bank's methods and possibilities of reacting immediately and flexibly. In my view a coded language increases the uncertainty surrounding monetary policy because a coded language does not improve understanding and does not suit a changing environment as mentioned before. One has to ask whether these methods are sufficient to guide market expectations or not. Should a central bank not aim at attempting to enlarge its set of methods? As already sketched, current empirical studies enlighten us to the importance of real-time data, that is, press conferences which mitigate uncertainty in the economy.

A coded language is a simplified form of communication; it works like a numeric sign or symbol. Any approach to the economy as a simplified model overlooks the importance of different interactions and the need of the central bank to influence the expectation-building of different agents in order to achieve its mandate of price stability. If a central bank adheres to the 'car analogy', it could attempt to apply Lewis's view that 'language conforms to regularity' to the steering of market expectations. If not, a central bank should be aiming at a common understanding.

The activity of speaking, decision-making and expectation-building processes is surrounded by uncertainty. Any of the simplified models involving an analogy to a mechanical arrangement emanates from the classical model of communication in which language and interactions by the receiving agents are eliminated. As explained, the classical model pictures communication as involving the causality between two mechanical impulses. The implementation for a coded language conforms to a behavioural regularity with such an analogical framework.

Contrary to its assumed beneficial effects, the use of a coded language will in fact create and exacerbate situations of being misled and misunderstood in financial markets. A coded language is by definition an exact and a non-vague language, whereas everyday language is not. Mundane language is characterized by non-exactness and vagueness but, it must be noted strenuously, not its meaninglessness. Vague terms and concepts are not bounded, whereas codes are. However, the boundaries of a coded language do not have any relevance to the shaping and development of monetary policy in practice (Sainsbury 1996).

Acting means that agents shape contexts and also create new contexts by their ways of acting (Kober 2002). There is no choice of whether to acknowledge the uncertainty of central banking or not. With uncertainty in the landscape, central banking needed to be anchored. It is important to emphasize that a central bank's pattern of acting structures the particular reality, that is, the environment and, hence, the relations of market interactions. Meaning and understanding cannot be anchored in an artificial system. The use of code words or signal words by a central bank does not itself provide a deeper understanding of how and when the central bank is going to take action. To understand the central bank's deeds and words as a coherent procedure requires one to perceive the central bank's talk or communicative action as embedded in the long-run framework of its mandate.

In contrast to a coded language, the use of everyday language – the language in practice – configures a certain context understood by participants of the financial market and the central bank. As a pattern of acting and a way of articulation it is impregnated by the changes of the context. Taking into account the communicative interaction between the central bank and the financial market, this ambient environment is part of the management of affairs in the contemporary world. It is configured by the articulated interactions. Therefore, it is appropriate to refer to a language-game to provide a picture of the totality of the embedded actions, rules, conventions, implications, interpretation, and persuasions of such communicative interactions.

5.2 Formal language as coded language

> Language did not emerge from some kind of reasoning. (Wittgenstein 1978 § 475)

This chapter gives some more evidence as to why the use of a coded language is not an appropriate way of achieving a central bank's mandate. A coded language implies the elimination of the arbitrariness of colloquial language. This would necessarily also imply depriving the language of its function. As was outlined, a word possesses multiple characters regarding different contexts and uses. Some of the risks of using a coded language were explained in the previous chapter. A coded language is rooted in a logical system or in an artificial system. If a language is grounded in axioms or logical principles the link to reality fails.

Scientific procedures are in general defined as objective and, hence, controllable by others. Logic, mathematics, and deductive reasoning are

accepted scientific methods. For instance, the language design of logic is reflective, analytic, and controllable. Mathematics leads to general models and formal language constructions. Logic and mathematics are driven by deductive reasoning and calculations. Deductive reasoning seems to fulfil the scientific criteria for truth and objectivity. Deductive reasoning should provide and guarantee a non-ambiguity, exactness, and precision of results, that is, the meaning. A coded language should also fulfil this demand to eliminate ambiguity, vagueness, and contextual sensitivity of the meaning of terms or concepts. However, the projection of mathematical and logical theories or axioms onto the world of experience is beyond the model world and is primarily a metaphoric approach to experience (Stekeler-Weithofer 1999, 516). The language of models and mathematics cannot be applied to experience directly but, rather, as related by analogies and projections. 'Exactness is a property of a model or formal theory and therefore limited in its proper application on real experience' (Stekeler-Weithofer 1999, 512).

> Just as poetry expressed in rhymes by no means leads to greater credibility of the poem and thus to increased ease of memorization, so do axioms and deductive premises define the sense of deductive sentences.[3]

A striking example of this failure to build up a system of a coded language in analogy to a machine was the attempt of the formal approach to language at the beginning of the twentieth century as introduced by Bertrand Russell and the early Ludwig Wittgenstein.[4]

I want to return briefly to this because it shed light on the limits on working out a theory of communication interaction based on a coded language (Muchlinski 2006). At that time a generation of scientists had attempted to build up a formal language approach to reality. The motivation was to conceptualize a complete system of formal language which should delete all ambiguity, inexactness, and vagueness from everyday language. Persuasions and convictions were to provide a scientific language for scientific processes which should fulfil all the supposed criteria of those processes. A scientific process was expected to be free of any ambiguity, inexactness, and vagueness. Scientific research should be expressed in a particular language which possesses all the criteria of non-ambiguity, exactness, and precision.

Russell explained his analytical tools in his publications on mathematics, logic, and philosophy. Shortly after these publications he opened up a discussion concerning the problems on how the meaning

of a formal language could be stated. He addressed certain problems concerning the formal language approach to science and to reality. He tried to build up a system of a formal language or coded language. He rejected his own earlier view, that is, his demand on the non-ambiguity, exactness, and non-vagueness of language. Russell (1986, 176) developed his critique of his early view on language and logic as a reflection to modern research in physics by stating that there are no simple entities such as atomic propositions in language.

Such neat assumptions of a formal language approach to reality and science were doomed to fail because the assumption of simplicity and exactness, and the atomised structure of the propositions and their meaning were themselves merely a construct by the protagonists of a formal language approach. In his lectures 'on logical atomism' in Cambridge in 1918, Russell started out by arguing that a formal language works only as a private language. Russell then abandoned the logical atomism in his approach to everyday language immediately after his lectures in 1918.[5] He went on to criticize the presumed isomorphism of a formal, that is, ideal, language, and its reality. Russell also criticized the view of a private language which neither leads to a meaning nor to an understanding because it is not shared or used by other people (Craig 1997 in Hale and Wright 1997).

Wittgenstein's *Tractatus* was influenced by Russell's thinking, and it addresses logic, logical syntax, and their relation to reality. The early Wittgenstein analyzed the relation of language and reality as an external relation. He stated that thoughts, mind, and reality were conducted by the system of logic and logical syntax alone. He defined the world as a composition structured by simple facts, that is, by logical syntax. Like Russell before 1918, the early Wittgenstein also tried to develop an ideal language and ideal language system. Such an ideal language, able to provide an analysis of the world, should be a picture of reality based on the same logical structure. The syntactical structure of the sentences should logically represent the facts as found. Objects and properties are independent of the use of language and therefore given ahead. The language only pictures the thoughts.

Wittgenstein proposed two main branches in his early work (Wittgenstein 1961): firstly, the 'doctrine of atomism' and, secondly, the 'picture theory of meaning'. Both doctrines imply the superiority of formal logic or logical syntax over everyday language. The early Wittgenstein argued, 'because language disguises thought', it is necessary to build up a logical system to organize and structure the signs and the symbols of meaning (1961, 4.002; 5.64). At the time that Wittgenstein

was concerned with his writings on *Tractatus*, he was attracted by the suggestion that logical syntax could work as a universal law and, hence, frame the language. His conclusion at that time was that propositions derive their meaning due to the logical syntax.

His 'picture theory of meaning' was based on the supposed simple entities. He conceptualized the 'picture theory of meaning' as a formal language approach to language and reality. Wittgenstein differentiated between the 'elementary proposition' and a proposition as the key elements of that picture theory. Any proposition contains simple elements, that is, it consists of 'elementary propositions'. An elementary proposition is defined as the simplest part of the proposition, in its atomic structure. The picture is determined by the logical structure of the world. To judge the truth or falsehood of a proposition or situation will depend on the correspondence of objects to reality according to a logical structure. Consequently, the structure of the reality is compared with propositions and, hence, driven by the logical syntax.

The picture theory of meaning as introduced in the *Tractatus* is based on the view of an isomorphism of the formal language approach and reality. This isomorphism was also propounded by Russell until 1918. Wittgenstein developed his picture theory as a picture theory of logical substitution. The elements of the picture are called facts because of their logical arrangement vis-à-vis other elements in this model. Facts, then, are defined logically. The structure is connected with the constituent elements logically. The picture theory of meaning should work as a measure for approaching reality and its meaning. All propositions or words are supposed to be arranged according to the logical syntax. The pictorial relation is rooted in that, too. Wittgenstein described the world or reality *as pictured through* the logical form or logical syntax.

The reader might ask, what can be said by a proposition defined as a pictorial relation? A proposition is a logical picture of a situation. Here again the dominance of the logical syntax became evident because any proposition configures its place in logical space. Also, a coded language is a picture. In contrast to the coded language, a word or sentence configures its place in the way of acting as a 'form of life'. At the end of the 1920s Wittgenstein changed his view radically – as Russell did – and stated that a private language does not imply that only one person uses this language alone but, rather, that such a person does not know if some other person means the same thing by using the same or other words. Whereas Wittgenstein in the *Tractatus* adhered to the view that meaning is rooted in the mental state, that is, the intention of a speaker, he abandoned this view in the late 1920s. The common saying that

thoughts, mental states, or intention are transmitted into a language is due to the traditional view of language as being a veil of thoughts or inner states (Trabant 1995). Articulation cannot to be separated from thoughts because the articulation is the thought itself.

Wittgenstein here made the turning point towards the meaning and understanding of sentences as rooted in their use and context. The use of language in practices does not imply the transformation of a private language into a public language, as Wittgenstein (1967b) said of this misleading view precisely: 'Here is a chair. Can you see it clearly? – Good – Now translate it into French!'

Like Russell, Wittgenstein had also undertaken fundamental theoretical upheavals at the end of the 1920s. He gave up the view that the structure of language mirrors the structure of logic. He developed his view on language as a process of language activity. Language is a pattern of acting and a way of proceeding. It is inherently connected with speaking or language in action. Language is rooted in the context and contingency, not in the causality of mechanical reactions or logical systems. A certain feature of language is that there are unlimited sentences to be created in various language-games. The network of sentences or concepts constitutes the system of the world as experienced. Although the network is changeable, nevertheless it includes entrenched sentences which are not in themselves suddenly changeable. Up to now I have referred to language approaches which describe language in its role as a means of acting. To be sure, there exist other views which are not discussed in detail here. However, to be brief about that – just to cast light on the key difference – the cognitive semantic approach defined language as an inner or mental system of categories not linked to the communicative interactions. The cognitive system itself is conceptualized as separated from human interactions because it is modelled as a mental isle which reacts to signals received. Every person is endowed with such a system. Language is seen as an amount of a parameter which can be measured and guided by a signal.[6]

The next section outlines the views of Wittgenstein. He pointed out that when we act we are acting *within a* game. There is no difference to be made between acting in a game and the use of language.

5.3 Meaning and understanding

> For such judgment, policymakers have needed to reach beyond models to broader, thought less mathematically precise, hypothesis about how the world works. (Greenspan 2004, 38)

This chapter outlines the concept of 'language-game', which seems to be appropriate to central banking communication. I will provide consideration as to why central banking should base communicative interaction on the everyday language rather than on a coded language to mitigate uncertainty in the markets. In contrast to a coded language, which has been introduced in the previous chapter as an artificial language, everyday language implies interactions in real-time reference and, hence, provides a degree of certainty to the evolvement of participation, understanding, and agreement.

The notion language-game is a concept coherently connected with working or employing language. It does not mean a 'language-play'. In using language, we do not reflect on it, we do not contemplate it, but we are simply involved as an agent in the language-game or communicative interacting. There are different language-games and a multiplicity of new types of language-games while others have become obsolete and forgotten. There exist resemblances between different language-games as interconnected nets. Not only *'times are changing' but also language-games are changing and bringing, therefore, a change in concepts and in the meaning of words.*

Wittgenstein emphasized in *Philosophical Investigation* that the language-game is the 'primary thing' which gives meaning to the sentence (1978 § 656). The 'primary thing' incorporates habits and contexts and is understandable as a pattern of language-based interaction. In (1978 § 23) Wittgenstein described the concept language-game as follows:

> Here the term language-game is meant to bring into prominence the fact that the *speaking* of language is part of an activity, or a form of life. Review the multiplicity of language-games in the following examples, and in others:
>
> Giving orders, and obeying them –
> Describing the appearance of an object, or giving its measurements –
> Constructing an object from a description (a drawing) –
> Reporting an event –
> Speculating about an event –
> Forming and testing a hypothesis –
> Presenting the results of an experiment in tables and diagrams –
> Making up a story; and reading it –
> Play-acting –
> Singing catches –

> Guessing riddles –
> Making a joke; telling it –
> Solving a problem in practical arithmetic –
> Translating from one language into another –
> Asking, thanking, cursing, greeting, praying.
> – It is interesting to compare the multiplicity of the tools in language and of the ways they are used, the multiplicity of kinds of word and sentence, with what logicians have said about the structure of language (Including the author of the *Tractatus Logico-Philosophicus*).

Wittgenstein's approach to the language-game was first discussed in lectures he gave in Cambridge, in the years 1930–32 and 1933–34, which were initially published in the 'Blue Book' and 'Brown Book', and finally published posthumously in 1953 as a single volume, titled *Philosophical Investigations*. Wittgenstein developed considerations opposed to his early view of the *Tractatus* he was once devoted to – as the last sentence in the above citation indicates.

Language-games as introduced in *PI* constitute themselves as rules and conventions, as pattern of acting in the times of their occurrence. Language-games do not follow external rules or conventions. A language-game is seen as a paradigm (*PI* § 51). 'When language-games change, then there is a change in concepts, and with the concepts the meaning of the words change' (*On Certainty*, § 65), hence the paradigm changes, too. Regarding the uncertainty surrounding the language-acting, we cannot predict how a language-game will change, but we know how it has been changed up to the present. The decision to participate and the decision building process are anchored in patterns of habits, in the inherent background of the communicative interaction, and not in artificiality. Agents learn by practicing and participating (Bernanke 2004; Ehrmann and Fratzscher 2009; Kohn 2009).

As patterns of acting, the language-games are not invariable throughout time. This is also true for the language-games of the Federal Reserve Bank (Bernanke 2009). A pattern of acting and a way of articulating, it is impregnated by the changes of the context and environment (Blinder 2006; Blinder and Krueger 2004). It is important to emphasize that a central bank's pattern of acting structures the particular reality, that is, the environment and, hence, the relations of market interactions. This is of remarkable evidence for its task in guiding market expectations. A central bank's way of acting creates the normative meaning of sentences. The 'language analogy' as proposed by Winkler to replace the mechanical analogy of central banking rests on the following

considerations: 'Language is an instrument. Its concepts are instruments' (Wittgenstein 1978 § 569). Wittgenstein agrees with Kant and Humboldt in emphasizing that only 'concepts lead us to make investigations' (ibid § 570). Concepts are embedded in the language-game as different studies on central banking in different countries have shown (see also Ehrmann and Sondermann 2009). The speaking activity of central banks and the interactions with the market create particular realities. It configures a normative context and environment. The meaning of language activity is the result of the continuity of procedures of the meaning. Market agents are not empty boxes in which the central bank is going to fill in the meaning by a certain policy of disclosure.

The new paradigm of central banks refers to modern language science indirectly. According to this interdisciplinary research, both 'matching deeds to words' (Blinder) and 'we do what we say and we say what we do' (Issing) implies no divergence between saying and doing, that is, *words* in t_1 are also *deeds* in t_1. Issing argues through this sentence that 'words' are also 'deeds' (Wittgenstein). Both sentences do not contain a commitment from t_1 towards t_{1+1}. The meaning of a sentence refers to the practice of the use of language (Wittgenstein 1978 § 43). The meaning of a sentence cannot be separated from its use in situations, context, or the way of acting, as Wittgenstein stated (1978 § 120):

> When we talk about language (words, sentences, etc.) I must speak the language of every-day. ... You say: the point isn't the word, but its meaning, and you think of the meaning as a thing of the same kind as the word, though also different from the word. Here the word, there the meaning. The money, and the cow that you can buy with it. (But contrast: money, and its use)

The meaning of a sentence cannot be conceived by a method of decomposition into its parts. As stated, concepts, sentences, and words are embedded in *changing contexts and environments*. These changes are linked to different 'forms of life' including institutions, like a monetary institution (central bank). According to the empirical finding that central banks act to reach their mandate and react to particular information in a similar way, Winkler has also outlined two consequences of the proposed 'language analogy':

1) A language in order to create 'an own specific language and corporate culture to serve their particular internal and external coordination

needs' is not desirable. It is important that sender and receiver share the 'same language' (Winkler 2000, 23–24).

2) Once a language has been trained there are benefits of language in terms of a public good insofar as words and sentences have been used in a consistent and coherent way according to changing circumstances. Winkler also stated that a central bank's information and messages needed to be anchored in a public space of judgment which also requires translating it into a language which is also known by the audience.

Winkler emphasized common understanding as elementary for the success of central banking in order to earn the coordinative benefits resulting from the efforts of aiming at a correspondence of internal and external communication:

> It is clear that there are considerable switching and learning costs involved in adapting a new language. This provides a strong case for continuity and careful, evolutionary step when modifications in the strategy become necessary unless a 'new language' is needed to signal a clear break with the past. (ibid)

Winkler referred to the habits and methods of institutions which tend to develop their own language as 'linguistic codes' (Kreps 1990). However, this language also has to be learned. I would like to add an additional consideration:

3) Given its task of steering market expectations in order to reach its mandate of price stability, a central bank has to reflect upon its own communicative interaction based on everyday language, hence as a 'language-game', in order to mitigate uncertainty in the markets and to stabilize expectation-building through a greater common understanding.

Admittedly, there are many words used daily in economic interactions and economic science which seem to possess a stable meaning, for example, economic growth, unemployment or unemployment rate, exchange rate, real interest rates, nominal and real wages, and deflator. As ongoing debates have shown, many other economic concepts, for example, price stability, sustainable growth, and exchange rate movements based on macroeconomic fundamentals, are periodically changeable and changing concepts.

As is documented by reference to selective FOMC transcripts of the Volcker era, the concepts of price stability and price movements and the concept of inflation was impregnated by two main paradigms: the monetarist view and the so-called Keynesian view. Greenspan similarly objected to implementing a numerically specified target for the Federal Reserve in order to define price stability. Blanchard, Dell' Aricca and Mauro (2010), International Monetary Fund (IMF), recently proposed to aim at an agreement between policy-makers and economists and, hence, central bankers, that price stability should be defined by 4 percent instead of the current accepted limit of 2 percent. 'Is it more difficult to anchor expectations at 4 percent than at 2 percent?' ('Should the Inflation Target be Raised?' ibid, 2010, 11). This proposal was immediately and negatively responded to by members of the European Central Bank, for instance Trichet and Bini Smaghi, among others.

> Identifying the flaws of existing policy is (relatively) easy. Defining a new macroeconomic policy framework is much harder. The bad news is that the crisis has made clear that macroeconomic policy must have many targets; the good news is that it has also reminded us that we have in fact many instruments, from 'exotic' monetary policy to fiscal instrument, to regulatory instruments. (Blanchard 2010, 10)

Many other concepts – for example, the Federal Reserve funds rate or discount rate of the Fed interest rates of money markets or bond markets, prices of option markets and prices of different good markets – work as scientific key terms. What they have in common is the fact that they do not refer to entities ontologically. Since experience can only be grasped and made through concepts, I propose that economics reflect this in its procedure of creating the meaning of concepts. Like other social sciences, economics is confronted with the relativity of the meaning of its concepts, or with the problems of context-sensitivity of the meaning and the need to focus on the understanding. Economic reality also emerges out of communicative interacting – as the current financial crisis has shown with clarity. The language-game represents the meaning of words and terms in relation to the conditions of life in society, lifestyle (Tugendhat; Wittgenstein), or lifeworld (Habermas).

Economic reality is partly constructed by particular concepts and terms (Knobloch 1999; Trabant 2009). However, the real economic facts and data deliver real economic real substances, for example, the balance of payment imbalances or international monetary relations,

currency union, and exchange rate targeting. Of course, a language-based constructed economic reality is not the whole story, if we look, for instance, at poverty, wealth, and external effects. The history of how the term 'external effects' has gained ground as a concept among economic scientists has shown, for instance, that conceptual changes and the procedures of creating new or distinct concepts and, hence, their acceptability in the community of science, occur throughout a long-lasting period of time.

Many of the above-mentioned concepts seem to work like codes because they seem to be exact, precise, and unambiguously defined words. Every agent in the market understands immediately what is meant by these concepts. Moreover, these concepts seem to possess an ontological reality because of their supposed incorporated reality and objectivity. They are understood as representatives of real economic entities which imbue information and strategies with clarity and confidence. These concepts also seem to function as an anchor for expectation-building. They are understood as real facts and as cognitive currency in the economic interactions, where they achieve their meaning in the contexts. To my view, economics as modern and self-reflecting science should not adhere to ancient principles or metaphors. Economics will not achieve acceptance and credibility by stating that economics is simply a mechanical exercise analogous to the pendulum proposed by Isaac Newton who – as Keynes (*Essays in Biography* 1942) investigated in his article 'Newton, the Man' – was himself a construct of his time:

> In the eighteenth century and since, Newton became to be thought of as the first and greatest of the modern age of scientists, a rationalist, one who taught us to think on the lines of cold and untinctured reason. I do not see him in this light. I do not think that any one who has pored over the contents of that box which he packed up when he finally left Cambridge in 1696 and which, though partly dispersed, have come down to us, can see him like that. Newton was not the first of the age of reason. He was the last of the magicians, the last of the Babylonians and Sumerians, the last great mind which looked out on the visible and intellectual world with the same eyes as those who began to build our intellectual inheritance rather less than 10.000 years ago. Isaac Newton, a posthumous child born with no father on Christmas Day, 1642, was the last wonder-child to whom the magi could do sincere and appropriate homage.

Indeed, the modern view of central banking has already started to reflect its own language-based interactions. However, economic science should more actively acknowledge the importance of language regarding the creation of economic 'facts and fictions'. One important step in this direction is to expand economic methods towards instruments that go beyond deductive reasoning. A variety of inductive methods is needed in order to obtain more clarity on language-based economics. The 'language analogy' (Winkler) should be applied to many more branches of economics. Language is a method to acknowledge, and the main instrument to create and shape the world. The language-based approach to economic issues implies that these procedures should also be part of economic science and not delegated or 'outsourced' to linguistic sciences. Economic reality is based on language construction and it is not possible to eliminate the vagueness and ambiguity of meaning by substituting it with logical constructions. The everyday language-based economy cannot be substituted by logic or deductive principles.

There exists no ideal language – not even logic or mathematics – with which to build up an economic science as an exact, non-ambiguous, and precise reality (see the argument by Russell, Ramsey, and the early Wittgenstein). An artificial language would fail since language evolves from its use in practice (Davidson 1994, 11):

> What is needed is a norm, something that provides a speaker with a way of telling (not necessarily always) that he has gone wrong, a norm the failure to satisfy which he or she will count as having gone wrong. ... Speaking in accord with socially accepted usage is such a norm, but one which, I have argued, is irrelevant to communication unless the audience of the speaker happens to speak as he does, in which case the norm is irrelevant not because it is a shared practice or convention, but because conforming to it results in understanding.

Why does such a norm matter? It provides a purpose for any speaker who wishes to be understood. Successful communication results in shared practices. The obligation, therefore, is to use words, that is, sentences, in such a way as to accomplish the purpose by being understood the way we expect. Therefore, a central bank will earn credibility by 'matching deeds to words', not by creating an artificial language that is not rooted in central bank practice itself.

> Meaning, in the special sense in which we are interested when we talk of what an utterance literally means, gets its life from those

> situations in which someone intends (or assumes or expects) that his words will be understood in a certain way, and they are. ... Thus, for me the concept of 'the meaning' of a word or sentence gives way to the concepts of how a speaker intends his words to be understood, and of how a hearer understands them. Where understanding matches intent we can, if we please, speak of 'the meaning'; but it is understanding that gives life to meaning, not the other way around. (Davidson 1994, 11)

As argued at the beginning of this chapter, a central bank's talk and language and, hence, its communication should rely on every day language. Wittgenstein gave reasons (1979 § 204) why coded language does not matter:

> Giving grounds, however justifying the evidence, comes to an end; – but the end is not certain propositions' striking us immediately as true, i.e. it is not the kind of *seeing* on our part; it is our *acting*, which lies at the bottom of language game.

Uncertainty would be enhanced by a coded language of central banking for reasons as outlined. However, in the connection of words and deeds, hence the *Thaetigkeit*, the communicative interacting as embedded in daily life and everyday language, provide certainty as a mode of agreement at hand (in the situation or language-game). Language-games constitute objects, truth, and convention insofar as agents do have confidence in the game. This is a prerequisite to participating in it. The pattern of language-based acting has been written by letters of life.

As Winkler proposed, the language analogy of the modern view of central banks should also pay attention to common understanding. What can be said about this understanding? Since the use of a concept is embedded in practice and interactions of agents and institutions, and in their expectations, goals, and the desire to be understood, the meaning and the understanding of a word or sentence depends on that contextual framework. Vagueness is characteristic of language, which is a social phenomenon. Trying to express a central bank's or central banker's statement in formal language would preclude common understanding.

Using a language is part of an activity or speech act which aims for common understanding. The meaning, implication, or interpretation still has to emerge from the interactive process involving all the

participants in the communication. The language of the actors is primarily addressed neither to names or signs, nor to things or objects. Rather, it leads to a coherence of meaning and understanding in the communicative interactions in that field, framework, or context.

Understanding is a result, and as such a capability to participate in market procedures. Since every participant plays a certain role by acting in different language-games, the use of everyday language is a way of acting. Understanding is not a mechanism which can be determined or defined by deductive reasoning or by purely mechanical elements. Understanding is not the deciphering of codes or input-output transformation. It is not deductive reasoning, like a coded language. If one says the code employed in a language corresponds to a particular sense or meaning, this does not in itself lead to a meaning and understanding but, rather, just to substitution.

Although meaning and understanding are not encapsulated in a concept, this does not imply that the text producer (for example, the central bank) offers an empty piece of paper which should be filled in by the audience's sense-giving in different contexts. We can argue that the central bank as a text producer tries to steer not only the expectations but also the attention of the audience. According to the history of language science, the subjective approach to language and understanding, wherein the listener discovers the meaning of the sent message, substituted the 'conduit metaphor' (see Chapter 1). However, a subjective approach has not been judged as an acceptable alternative. Understanding is rooted neither in mental states nor in the subjective construct of the meaning.

So where to go? If we remember that language is an activity, hence a language-game, we are able to argue that language – which is not private property – works as a public good and as an inter-subjective instrument. Understanding, which is based on the language as used in a dynamic way, echoes past events. It is the speaker, his experience of communication, his uses of the language, and the reaction from a multiplicity of listeners which echoes the understanding.

Understanding a text is interpretation, or text-based language activity. The text neither 'speaks' on its own nor is it an empty piece of paper. A text does not have a static meaning except where we attach such a static meaning to the text, such as is the case regarding instructions on how to use a machine. To understand (a text) is judging inferentially. To understand leads to further language-based activity. To understand implies participating in language-based interaction and, hence, to advance a step further. Inference from a language event or language-based event is

always embedded in knowledge and experience. Therefore, understanding is part of a language-based activity and, hence, reflexive. According to Analytical Philosophy and the modern view of language science, understanding is agreement in practice:

> [R]egularity, on agreement in action. ... We say that, in order to communicate, people must agree with one another about the meaning of the words. But the criterion for this agreement is not just agreement with reference to definitions, e.g. ostensive definitions – but also an agreement in judgments. It is essential for communication that we agree in a large number of judgments. (Wittgenstein 1983, 342–43)

As explained in current debates in central banking and also the proposal by the IMF according to a new inflation targets, different cultures generate different ways of understanding and conceptualizing transparency and communication. Empirical findings on central bank transparency and information policy strategy document that the language a central bank has chosen to express or explain its monetary strategy may differ considerably across countries and central banks. Regardless of how the mandate of a central bank is precisely established in different countries, the imperative in implementing a successful monetary policy of achieving price stability has been accepted as an 'iron law' of central banking in the economy.

6
Conclusion

Following recent scientific research, I have attempted to achieve four considerations concerning the implications and consequences of the new paradigm of central banking. I have drawn a clear distinction between a central bank's communicative interaction, hence the meaning of communication which is the key issue, and the implementation of a particular monetary policy, which is secondary.

First, I have shown that the term 'monetary mystique' (Brunner) differs from the general idea of 'mystique'. With respect to the iron law of communication theory – *'it is not possible to avoid communication'* – already accepted in social sciences and humanities, I have argued that meaning and understanding *do not arise beyond interaction* with agents of the financial markets and the central bank. Meaning and understanding are embedded in the context and environment. Therefore 'monetary mystique' described the lack of understanding and meaning. Something seems to have a 'mystique' when we do not have a full understanding of it.

I have then explained why the concepts 'matching deeds to words' (Blinder) and 'we do what we say' and 'say what we do' (Issing) are not encapsulated in a logical semantic or in deductive reasoning, but in a way of communicating action. The use of everyday language has its reference in concepts which refer to the means of acting and not to a coded language. Transparency and accountability refer to the central bank's *practice*, not to abstract premises. Achieving transparency and credibility can only be defined as a degree of transparency, or degree of credibility, because both concepts refer to the means of acting.

Secondly, I have tried to elaborate further reasons supporting why the 'language analogy' (Winkler) should replace the 'car analogy' in central bank literature. I have emphasized several aspects which describe the

changing environment of the central bank. As meaning and understanding cannot be separated from context, a coded language or formal language approach to central banking would in fact increase the uncertainty which surrounds the central bank's action. Transparency and accountability are the result of verbal and non-verbal interactions and of reciprocal relationships between a central bank and the market regarding changes in market variables and the perceived reaction by the central bank and the markets.

Thirdly, I have argued in favour of an interdisciplinary approach to central bank communication, following the proposal by Akerlof (2007). Such an interdisciplinary concept of communicative interaction is linked to the modern concepts of meaning and understanding in modern cognitive sciences and language sciences. Due to the 'language analogy' a central bank signals its verbal and non-verbal participation within a social context and reflects the reciprocal relationship with the market, which has to be perceived, interpreted, and understood.

Finally, I have proposed a conceptual framework of communicative interaction based on three dimensions, in which information is conceptualized *as a related object*. This raises the question of how the released information will be perceived and acknowledged. I have introduced an interdisciplinary perspective on how the acknowledgment, meaning, and understanding can emerge. To understand language and communicative interactions does not require reliance on a universal theory of understanding or a coded language. Any debate about a formal language approach to economics should be addressed to at least two main concerns (Morishima 1991): (a) the ontological aspect and (b) the epistemological aspect of economic reasoning. The ontological aspect concerns the focus of mathematical propositions. Do mathematical propositions say something about the mathematic system itself or about the empirical world? This question brings us to (b): The epistemological aspect deals with the question of whether we acquire and enlarge mathematical knowledge, or knowledge related to the empirical world, by the use of mathematics. Modern science abandoned the justification of causal principles by introducing conceptual investigations. The conceptual investigation was refined by Humboldt and Wittgenstein by explicating the context-sensitivity of concepts and, hence, the importance of context and circumstances regarding conceptual investigations.

Notes

Dramatis Personae

1. Blinder, Alan (1998) *Central Banking in Theory and Practice*. Cambridge, MA: 64.
2. Issing, Otmar (1999) 'The Eurosystem: Transparent and Accountable or "Willem in Euroland"'. In: *Journal of Common Market Studies*, Vol. 37, No. 3: 503-19: 508.
3. Wittgenstein, Ludwig (1978) *Philosophical Investigation*. Basil Blackwell, Oxford: § 546.

Introduction

1. I gave an appraisal of this issue: Muchlinski (2005, pp. 130–47).

1 The Way Out of 'Monetary Mystique'

1. http://www.federalreserve.gov/monetarypolicy/files/FOMC19800109meeting.pdf date of access 12.12.2009, p. 14.
2. Bailey and Schonhardt-Bailey (2005) evaluated the FOMC Transcripts of the year 1979 in order to provide textual evidence for a change of the attitudes of FOMC members towards anti-inflationary decision-making.
3. Aspects concerning foreign market and the exchange rates of the U.S. dollar were on the agenda of the meetings in the years 1979 to 1983.
4. The new wording was published in the 'Bluebook' 02/1979, pp. 19–21.
5. Chuck Partee at the conference call June 23, 1980 (ibid, p. 2): 'My only question is whether we ought to move further. I would agree with the Chairman, though, that we would want to be gradualist about this and that we have a meeting coming up not too long from now, so $400 to $500 million is acceptable to me'.
6. Furthermore 'secrecy' is, it is argued, also required in the case of a central bank's intervention in a foreign market (Chiu 2003; Fratzscher 2004, 2006). Fratzscher (2008, 149) offered new empirical findings on how exchange rates incorporate new information regarding three main channels. (1) The portfolio balance channel refers to foreign exchange interventions by central banks. (2) The signalling channel documents that long-term interest rates, stock prices, and exchange rates are significantly driven by expectations and, hence, communication and oral-intervention. The coordination channel draws attention to the 'double edged' (Amato, Shin, and Hyun 2003) of language as a function to convey information and provide an anchor for expectations-building. I turn to the so called 'double edged' function of language in chapters 5 and 6.
7. See Keynes (1936) *General Theory of Employment, Interest and Money* (1936), chapter 5.
8. Ehrmann and Sondermann (2009) provided a new empirical study according to the hypothesis that public signals minimize the volatility insofar as agents' beliefs are based on private information. The disclosure of the main

publication of the BoE (inflation report macroeconomic information) seem to be judged as 'stale over time' and hence private information has become more relevant for market driven variables (2009, 21).

9. See also chapter 2.3.2: Habermas' approach to communication and validity claims as composed of three types of validity: 'truth', 'rightness', and 'sincerity'.
10. Winkler does not adopt a 'socio-linguistic approach' as Geraats (2002) stated. For a 'socio-linguistic approach' read Coulmas (2005). Geraats revised her interpretation: see Geraats (2006).

2 A Conceptual Framework for Central Bank Communication

1. A comprehensive introduction on model of communication is provided by Strohner (2001), Rickheit, and Strohner (2008).
2. Due to this antique view the aspect of semantic was seen as unimportant, see Shannon, and Weaver (1963/1949), see also Reddy (1979) in: Ortony (ed.) (1979, 284–324).
3. In another paper, Lakoff and Johnson (1980a) contributed to the debate 'the essence of metaphor is understanding and experiencing one kind of thing in terms of another'.
4. Heuristic methods were also introduced by Kahneman and Tversky (1996), and in Tversky and Kahneman (1981) to emphasize a nonlinear and recursive process of information processing. Following the death of Tversky, Kahneman has recently enlarged the scope of the research (Kahneman and Tversky 2002); see also Brandstätter, E., Gigerenzer, G., and Hertwig, R. (2006), Gigerenzer and Brighton (2009), Gigerenzer, Hertwig and Pachur (2011).
5. Giddens, A. (1989) For further investigation on Giddens and the structuration theory as 'an attempt to work out an overall ontology of social life, offering concepts that will grasp both the rich texture of human action and the divers properties of social institutions', see Windeler (2001, 146).
6. The concept of 'indeterminacy' goes back to Quine (1959).
7. The 'Speech act theory' was founded by Austin (1962) and Searle (1969). Searle and Austin developed further the theory of speech act by integrating the language view provided by Ludwig Wittgenstein.
8. The problems of the 'speech act theory' should not be evaluated here because much work has already been done on this. See for instance, Fermandois (2000), who investigated the roots, implications, and consequences of the speech act theory in detail.
9. Early theories emphasize that communication is rooted in the sender's receptive efforts to construct an understanding (Altmann and Koch 1998). For instance, the founder of the 'radial constructivist approach', Maturana, failed to explain understanding as cognitive processing of information. He maintained the mechanical point of view of transmitting information. Also, Luhmann, who was influenced by that early constructivist approach, failed in this regard. He defined social agents, people, and institutions as 'referential systems'. Focusing on system as an autonomous entity, he eliminated the distinction between social actions, communication, knowledge,

and judgment. Any system in itself is defined as autonomous and referentially oriented as 'autopoesis' (Luhmann 1984).

10. The modified theories of information transmission today go beyond the formula Lasswell introduced in the 1940s.
11. Wittgenstein debated with Waisman, a member of the Vienna Circle, about this issue: see Wittgenstein (1967a). Wittgenstein proposed not to reconstruct intention as a mental state since the understanding of symbols, words or sentences occurs by the articulation in practice, that is, the use of language (Muchlinski 2006). Language is not neutral towards thoughts.
12. Stekeler-Weithofer (1999) proposed six criteria for communication: clarity, truth, explicitness, relevance, realism, and charity.
13. See also Künne (1990, 212–36).
14. Heath (2001, 23) proposed reading Habermas in the light of game theory approach. Heath differentiated between 'strategic action' and 'communicative action'. Whereas strategic actions refer to game theory – for instance, common knowledge, rational action alternatives and an acquainted probability distribution – communicative actions refer to a public realm created by language activity in order to solve coordinative problems.
15. Stekeler-Weithofer (2004, 180) concluded Davidson failed to develop his theory towards a theory of communication.
16. See chapter 2.3. On further introduction to miscommunication, see: Parret (1994), Taylor (1992).

3 Central Banking and Communication As a Function of Circumstance

1. Cukierman (2002, 15–35) gives an introduction to three main types of central bank transmission models, which are based on three different types of expectations hypotheses – the expectations-augmented Phillips curve (model 1), the fully backward-looking pricing model (2) and (3) a New Keynesian Transmission Mechanism with Forward-Looking Pricing model. The core premise of model, for example, is that changes in the expectations of future variables, prices or interest rates fundamentally affect current pricing behaviour. Cukierman also stated that two elements of the central bank's context and environment remain opaque: the Federal Reserve Bank's model and objectives. This is also the case of other central banks in industrialized countries because central banks are not willing to disclose 'their' model to the public.
2. Further analyses and contributions to this issue are also to be found in the conference 'Getting the Markets In Synch with Monetary Policy', Proceedings of the Twenty-Sixth Annual Economic Policy Conference of the Federal Reserve Bank of St. Louis, in *Federal Reserve Bank of St. Louis, Review*, July/August 2002, Vol. 84, No 4.
3. The Taylor Rule has been extensively discussed in Orphanides and Williamson (2005) among many other contributions.
4. Bernanke (2004a) referred to the biographer of Montagu Norman, a former governor of the Bank of England.

5. To give a complete list of the contributions here would take up a great deal of space; see, for example, Blinder (2009), Ehrmann and Sondermann (2009).
6. Among the literature on this topic, see, Ehrmann and Fratzscher (2009, 2007a, 2007b, 2005a, 2005b, 2003), Fracasso et al. (2003), Heinemann and Ulrich (2005), Schmidt and Ullrich (2006), Berger, de Haan, and Sturm (2006).
7. The *International Herald Tribun*e reported: 'the Growing Greenspan Role Worries Some' (Friday, October 2001). 'Greenspan has been everywhere in guiding economic policy in the wake of the terrorist attacks – slashing interest rates, helping to get Wall Street running again, shaping the tax cuts being developed by the Congress and evaluating which airlines should receive government loan guarantees.' Politics became wary of the greater influence of the monetary policy in their own terrain, whereas some economists feared that the Federal Reserve would be too involved in politics and hence lose its independence.

4 Economics and Language

1. I should repeat here that I do not turn to contributions of the game theory and experimental research on game theory and public good experiments. See: Brosig, Jeannette/Weimann, Joachim/Ockenfels, Axel (2003).
2. I do not prefer the traditional view of economics as proposed by Friedman (1953), who followed Popper (1934). For an overview and criticism of this traditional view, see Dunn and Maddala (1996), Kuhn (1962), and Mirowski (1988).
3. For an approach on modern institutions, see McCloskey (1994).
4. FRB means the Federal Reserve Board: the FRB/US model focused on the U.S. Economy and the FRB/Global on the United States and the Rest of the World Economy (R.O.W.).
5. 'VAR expectations are identical to the forecasts of a small vector autoregression (VAR) model that includes equations for a few key economic measures. This is another option for expectations formed used in FRB/US', Brayton et al. (1997a: 228).
6. Russell (1905, 1914) provided different examples in order to discuss the problem with truth condition; see also Künne (1990, 1993); see also Dascal (1994, 323–34).
7. For conceptual investigation on the historical lines of modern view of language, see Trabant (2003).
8. 'It is, a priori, clear that in analysing we must arrive at simple components – is this, e.g. involved in the concept of analysis –, or is analysis ad infinitum possible? – Or is there in the end even a third possibility? ... And it keeps on forcing itself upon us that there is some simple indivisible, an element of being, in brief a thing', Wittgenstein (1979) *Notebooks 1914–1916*.
9. The controversy in the literature about that issue should not be repeated here. See Scholz (2001), Stekeler-Weithofer (1999), Lakoff (1977, 79–106).
10. This view has been enlarged to a research area, for instance see Beton.
11. Scholz (2001^2: 111, 196, 204ff.), ibid.

12. Wilhelm Quine (1908–2000), an American logician and philosopher, who taught at Harvard. He was influenced by Bertrand Russell (1872–1970) a British logician and philosopher.
13. Lewis referred to Schelling (1960).
14. Research on that field of cognitive sciences, economics, and rationality is provided by Gigerenzer (2004a).

5 Language, Expectations, and Circumstances

1. See Trabant (1998, 1999, 2003, 2009).
2. The term Analytical Philosophy encompasses both the roots of Analytical Philosophy (see Dummett 1993; Nagel 1974) and the current state of Analytical Philosophy which could be categorized by different branches, for instance, the rejection of metaphysics (Frege, Moore, Ramsey, Russell, and the early Wittgenstein), the Vienna Circle and Positivism (Carnap, Hahn, Neurath) and the Language Philosophy or 'linguistic turn' (Austin, Brandom, Ryle, Searle, Tugendhat, the late Wittgenstein).
3. 'So wenig wie eine poetische Form, etwa Rhythmus und Reim, die Glaubwürdigkeit der mit ihrer Hilfe erlernbaren Merksätze erhöht, so wenig definieren Axiome und Deduktionsregeln die Wahrheit der deduzierbaren Sätze' (Stekeler-Weithofer 1999, 512).
4. The 'early Wittgenstein' concerns the *Tractatus Logico-Philosophicus* – quoted as *Tractatus* – he published in 1918. Shortly after publication he had started to criticize his *Tractatus*. Also Russell, Ramsey, and Keynes addressed their criticisms to that view on language (see Muchlinski 2011).
5. In contrast to Russell and Wittgenstein, Carnap (1928) tried to improve his view that language and reality are driven by logical syntax.
6. Criticisms addressed to this view are given by Trabant (1998).

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