

Dissolving Dualism

Dissolving Dualism

A Tripartite Model of Cognition for Religious Truth

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Abstract

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This investigation can be described as a long journey to a final destination: a truth in religion. We start by considering dualism of the subjective and the objective, the classical model of cognition that underlies notions of truth. Dualistic notions of cognition lead to serious problems, especially for religious truth. Religions claim to state truths about the nature of the universe and human destiny, but these truths are incompatible. With a dualistic model this problem of diversity of religious truths leads to fundamentalism or relativism. Thus, this research aims to turn to the roots of the cognitive situation and investigate the way we cognize and relate to the world to provide a better model.

As we consider the philosophical theories and empirical investigations of cognition, we come to the conclusion that dualism of the subjective and objective is not tenable. As the findings of contemporary mind sciences and phenomenologically oriented research indicate, human cognition is embodied, embedded, enacted, extended, and shaped by language.

Thus, I propose to re-conceptualize the cognitive situation to provide a better philosophical account. I put forward a tripartite model of cognition, which unites language, action, and environment. The consequent application of this model to the issues of truth and religion shows that we can avoid the problem of diversity of truth claims. A tripartite model allows us to explain how we can maintain religion as true, despite the diversity of religious truth claims. Additionally, as this model is fundamental, its application leads to various new findings and inferences, which render anew the world and the way humans relate to it. Thus, our journey brings us to new frontiers of investigation.

Keywords: truth, religious truth, embodied cognition, dualism, Merleau-Ponty, phenomenology, cognitive science, neurophilosophy, model of cognition, theories of truth, language, meaningfulness, meaning, subjective, objective, intersubjective, scientific realism, social constructivism, Wittgenstein, white spaces, agency, gaps in cognition, enacted cognition, extended cognition, embedded cognition, epistemology, philosophy and empirical investigation

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To the memory of my mother

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Introduction

This investigation can be described as a long journey to a final destination: a truth in religion. The problem of religious truth is twofold: one part of the problem is related to the problem of truth in general, and the other to the particularity of religious truth. So to start an investigation of truth in religion, we first have to ask: *What is truth?* And then: *What is specific to religious truth?* How does it differ from other truths such as scientific truth or logical truth?

Let us begin with the first question. Philosophy proposes lots of varying answers to the question of what truth is. Truth can be seen as coherency, correspondence, practical efficiency, openness, etc. Some ideas deny to a concept of truth the ability to have any content at all, and consider it as void (minimalism).¹ But here I am not interested in explaining away any idea of truth, so I will focus on the substantive theories of truth.²

Aristotle was the first to introduce truth for philosophical scrutiny and explained what truth is: “To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, and of what is not that it is not, is true”.³ This statement can be considered as a basic notion of truth, upon which other theories of truth bear. As the Aristotelian notion of truth claims, there is first of all a human being capable of saying something about the state of affairs. Then there is something beyond us, something to which we direct our efforts of cognition and which we express in our statements about it.

The Aristotelian way of describing an issue of truth reveals the main idea behind substantive theories of truth. Truth is usually interpreted in terms of subject and object: a cognitive situation consisting of a cognizing subject and an objective world being cognized. The aim and result of this cognition is truth. Most substantive theories render truth as a result of a two-place relation between a cognizing subject and an object being cognized. In other words, *truth is a result of a relation between subject and object*. Consequently, the basic puzzle for a philosopher striving to solve the problem of truth is

¹ Horwich, 1998.

² In relation to religious truth minimalism is problematic. Minimalism does not take account of the distinction between making a truth claim and justifying it. But for religion, as it will be shown later, justification is a separate issue from proclaiming something as true. That is why I am focusing on substantive theories of truth.

³ Aristotle, *Metaphysics*, 1011b25.

the tension between subject and object, between knower and known. It is this cognitive situation where truth is to be found. This means that in order to know what truth is we first have to clarify what subject and object are and how they relate to each other.

Religious truth

Let us turn to the second question: what is specific about religious truth? Why do we have to consider religious truth separately from other kinds of truths (scientific, logical, etc.)? One of the main problems here is the *diversity of religious truth claims*. Here is how Keith Ward puts it:

The problem is this: many religions claim to state truths about the nature of the universe and human destiny which are important or even necessary for human salvation and ultimate well-being. Many of these truths seem to be incompatible; yet there is no agreed method for deciding which are to be accepted; and equally intelligent, informed, virtuous and holy people belong to different faiths.⁴

This problem especially concerns the exclusivist religions. Exclusivists are those who claim that only their religion is true, while all the other religions are false or (in a moderate version of exclusivism) “contain varying degrees of truth”.⁵ Thus, the first problem for us here is this: how can we account for the diversity of religious truth claims?

The other problem specific to religious truth is related to *religious experience*. Religious (or numinous) experience “presents a spiritual reality for us which is not accessible to our ordinary senses”.⁶ But it is debatable whether non-sensory experience is logically possible and if it is a reliable mode of perception.⁷ Thus, we need to account for perception and the kinds of perception.

The problem of religious experience is related to the problem of diversity of religious truth claims. The former is often used to justify or back up the latter. The reference by religious truth-claims to non-sensory numinous experiences and a spiritual reality distinguishes religious truth claims from other kinds of truth claims.

There are lots of theories of truth and their explications for religion. Yet the problem of religious truth is still not solved. Here some might object that the philosophical problem is not to be solved, but to be cured, as Wittgenstein suggests: “the philosopher treats a question; like an illness”.⁸ But religious truth is a not a purely philosophical problem. This problem (or, better to say, its direct effect on human life) existed long before Aristotle expressed

⁴ Ward, 1990, 1.

⁵ Sagi, 1999, 93.

⁶ Zackariasson, 2002, 17.

⁷ Zackariasson, 2002, 18–19.

⁸ Wittgenstein, *Philosophical Investigations*, §255.

his view on what is true and the entire reflective philosophical enterprise began. We can find in the Bible the story of Elijah challenging the priests of Baal to prove in a fire contest that the god worshipped by them is the true God (1 Kings 18:16-40). Despite the oddity of Elijah's way to resolve the problem of truthfulness of religious claims, in this story we can see precisely the same problems of diversity and justification of religious experience, haunting religious truth. We can also see in this story what happens when two exclusivist religions clash: they both believe that one of them should be defeated and rejected as false. Thus, the problem of religious truth has ramifications for lay people and social aspects.

As this problem concerns everyday life and the wellbeing of lay people, its solution concerns these people as well. People outside of the academic field want to know how to handle the truth claims of other religions and of the religions they belong to. Disagreement on religious truths is strongly associated with bloodshed and wars. We cannot neglect the ramifications for individuals and society of this problem and of the attempts to solve it. That is why curing a problem in a Wittgensteinian manner may be not enough. So I am going to make an attempt to provide not a cure but a contribution to a solution of this problem, which can possibly be used not only for philosophical purposes.

As the problem does not yet have a sufficient solution, we need to address it anew, looking for new ways of dealing with the issues of truth. In order to discuss the very possibility of religious claims being true, we need some sort of basis. In fact, the way we account for truth depends on the general picture of the cognitive situation. The way we account for the world, human and cognitive relations determines a place of religion in this picture. The way religion can be true is to be found in this picture.

Dualism

The preliminary suggestion I am working from is that in order to solve this issue we have to return to the very roots of the problem of truth. We need to go back to the cognitive situation where truth emerges, to the terms of the subjective and the objective, in which this situation is usually put. If there are no satisfactory solutions of the problem of truth, we need to revise the philosophical systems and basic terms in which this problem is believed to be solved. So I am going to revise dualism and the rendering of cognition in terms of the subjective and the objective in order to look for a better way of dealing with the issues of cognition and truth.

As will be shown in the following, dualism raises almost as many problems as it solves. Some problems arise on the philosophical level: rendering cognitive situation in dualistic terms leads to detachment of the subject from the world and from other humans, which in turn hinders cognition and af-

fects human wellbeing, as a feminist critique shows.⁹ In chapters 1 and 2, I consider some distinct philosophical systems treating cognition in terms of the subjective and the objective and show which problems arise from such approaches.

Additionally, dualism raises problems on an empirical level. The unity of the subjective and the objective in the human body is a first problem in a row of empirical problems for dualism. As will be shown in chapters 3-7, the detachment of the subjective from the objective is incompatible with the data of empirical accounts. Phenomenology and cognitive science show that cognition is embodied, embedded, extended, and enacted.¹⁰ The properties of human bodies, instruments and environments, traditionally considered as objective, are constitutive for cognition and cannot be accounted for in dualistic terms. These features should be accounted for by other concepts than subjective-objective.

Moreover, there are also considerable linguistic issues related to truth, neglected by many dualistic approaches to cognition and truth. However, the importance of language can be seen even in the above Aristotelian statement: the situation where truth emerges includes not only the subjective and the objective, but also language, or “saying”, as well. Thus, we have to discuss language in order to see what role it plays in the cognitive situation and how it can be accounted for.

So, I consider dualistic approaches problematic. I dedicate a lot of space in this investigation to revision of the main issues of the subjective and objective, looking for new ways of accounting for cognition and truth. Thus, the reason for discussing the subjective and the objective at length is not to accept these categories but to recognize that they have something important in them that we have to find out before revising dualism.

Method of the investigation

Thus I have settled the space and limits of the quest for truth for my investigation. The second step requires us to figure out what data should be used to account for the subjective and objective and their relation. The problem of cognition, the subjective and the objective is considered by lots of philosophical traditions and schools each having specific presuppositions and methods. Thus in order to approach a problem from a perspective free from too many presuppositions I will not start my investigation within the bounds of one certain philosophical tradition. Instead, I will trace the main ways that various philosophical systems propose for treating a relation between subject and object.

⁹ Tanesini, 2004. Also here should be mentioned the critique of dualism and modern notion of objective knowledge by Susan Bordo: Bordo, 1987.

¹⁰ These features of cognition and their incompatibility with the dualistic approach will be considered in details in chapter 4.

I am going to revise several distinct and influential philosophical systems, which I consider to be *representative examples*. My choice of philosophical tradition is driven by the problems the tradition deals with. If we have these three issues at hand (subject, object and relation between them), it seems reasonable to start by establishing how the subject is accounted for, then turn to the object and then to empirical issues of the relation between them.

First I will focus on the issue of the subject and observe how the subject in its cognitive relation to the world is accounted for by Descartes, Kant, and Merleau-Ponty. As these philosophers focus on the subject and the way subject cognizes the world, their systems are taken as the representative examples of philosophical treatments of the subjective.

Then I will turn to the problem of the objective, using investigations of the traditions mostly focusing on the world. I consider the accounts of scientific realism and social constructivism, as these traditions are mostly interested in accounting for the objective. Additionally I revise Wittgenstein's philosophy, as he deals with the way the objective is present in our language. The empirical issues of the relation between the subjective and the objective are presented through representative examples of the findings of phenomenologically-oriented empirical research, neuroscience, cognitive science, sociology, psychology, and linguistics.

This *bricolage* of various philosophic traditions, supplemented by empirical data, is the method that I have chosen for this work as it fits best the aim of my investigation. If I am looking for the best way to account for cognition and truth in religion, it is not justified to choose only one tradition. As there are many traditions approaching these issues, each having distinct perspective and methods, the choice of only one of them is a matter of taste and personal presuppositions.

But the diversity of traditions does not mean that we have to reject all of them without consideration. These traditions provide important perspectives on the issue of my investigation. Therefore, it will be useful to consider and compare the views they propose, and subsequently to apply some of their ideas to create a new perspective. To make an unprejudiced account of the problem of truth, it is necessary to distance oneself from all the traditions in order to make a bird's eye overview of their approaches with their advantages and disadvantages. I have to scan through many traditions looking for what they can contribute to the solution of the main problem and make a brief account of that.

My analysis of philosophical ideas and traditions may seem superficial. Indeed, I am not going to provide a full-blown account and a complete overview of the chosen philosophical traditions with all details. At many points in my investigation I have to sacrifice depth for breadth. To fulfill bricolage investigation I do not need a complete analysis of the philosophical traditions and their ideas. As my **aim** is *to reconsider the cognitive situation in relation to religious truth both from conceptual and empirical perspectives*, I

only choose key ideas of various traditions that are relevant for my investigation.

My goal is not to analyze the philosophical ideas of the objective and the subjective within their own bounds and the problematic and ideological context they produce, but to compare them against some external schema and set of conditions (folk notions). These folk notions raise questions, the answers to which are to be found in philosophical traditions. That is why I only explicate some ideas resonating to a given scheme. I listen to the answers that the philosophical traditions give to the questions raised by folk notions, and then compare them.

Usage of empirical data for philosophical research

The introduction of empirical data to philosophical research needs additional justification. What should come first: philosophical reflection or empirical research? This question can be raised in regard to my usage of empirical findings. One can argue that philosophy has primacy over empirical findings and does well without them.

One of the main problems philosophers see in usage of empirical research is that the empirical data here is used to verify other empirical data. Therefore, we encounter a kind of circle, and the existence of such a circle may be regarded by some scholars as disqualifying the usage of empirical data for philosophical purposes. But I can propose two arguments in favor of the usefulness of sense data for philosophy. First of all, we can see quite the same circle if we question the reliability of the traditional philosophical instrument – reasoning. Indeed, we use reason to verify the results of our reasoning. Therefore, we use an instrument to measure whether the measurements made by it are correct, which is a circle indeed.

Nevertheless, I argue that this circle is not vicious. This circle is what we can call a general human predicament. We cannot avoid this circularity in our overall human condition. In certain situations we have to check whether our sensual experiences are correct, and here we need some criteria for reliability. Thus, we can use measurements made with some instruments to correct our other sensual experiences. For example, we can check the wavelength to justify that we recognize the color correctly. As we are prone to some visual illusions, we can use the instruments proposed by science as providing a criteria for correction of our other sensual experiences.

Therefore, I propose to regard senses, as well as reason, not as a general criteria of reliability, but as an instrument we can use in certain situations. Since we have the general human predicament, in some situations we need some other criteria than direct bodily experience. There science helps us.

The reason to use empirical data is not to replace either direct bodily experiences, or philosophical reflection in the first person perspective, with empirical findings. It is only to take into our account of cognition issues that are a part of our lives as well: scientific ideas such as relativity of time and

space, neuronal functioning, and indeterminacy, affect our thinking, as these are part of general human knowledge, shaping our worldview. And scientific knowledge is a part of our life, influencing the way we cognize and relate to the world. It is an important source of data and ideas that we should not neglect in the quest for knowledge and truth.

Our bodily experience is always the first and most basic level of cognition. Therefore, we can never disregard it or replace bodily experience with empirical theories. But our philosophical reflection upon experience is a mixture of taking account of bodily experiences, philosophical concepts, and what we know from science. So in this investigation I do not intend to deal with the issues of primacy between philosophical reflection and empirical research. Instead, I am going to show how both these endeavors influence each other in a constantly ongoing process.

In dealing with the results of empirical sciences I use the same approach as for philosophical systems. I do not make a complete analysis of the scientific theories and data. Again I use a schema to map the results and to make sense of them. This allows me to gather the data of various fields nevertheless keeping the investigation precise.

It is also worth mentioning that I will skip many topics that may seem relevant for the issues of truth, religion, the subjective and the objective. For example, I do not account for the issues of realism and anti-realism, and I do not dedicate a separate chapter for clarification of what can be considered as religion. This is done (or, not done) intentionally, as the attempt to embrace all the possibly relevant topics would make the investigation too long and imprecise. Thus I stick to the main line of reasoning, following the steps I have planned and aiming at the main goal of the inquiry: the re-consideration of the cognitive situation in order to account for the possibility of truth in religion.

The overview of the investigation

This investigation subdivides into three main parts. *The first part* starts with an overview of accounts of the subjective and the objective in various systems. I revise their ideas and see that some of them are insufficient, as they do not explain all the relevant particularities. After that I extract the main terms that should be used and ideas that should be taken into account when considering how cognition functions. Then, with these terms and ideas I turn to empirical observations of cognition and particular theories based upon observations and experimentation.

In the second part I consider empirical accounts of cognition, using their terms and looking for possible empirical correlates to the subject-object unity in the body, and conceptual schemes. My aim here is to use empirical accounts as an aid in conceptual restructuring. If we aim to correctly conceptualize cognition, our conceptualizations must have their anchor in empirical observations. Thus, in this part phenomenology provides insights, while

cognitive science provides data and theories. Here I use the notions of embodied, embedded, enacted, extended, and situated cognition as a fruitful approach to empirical data.

I also discuss language as a system functioning in humans. I review the findings of philosophy of language, cognitive linguistics and psychology in order to find out how conceptual ideas and terms, identified in the conceptual part, function and interact being mapped onto the empirical level.

In the third part I revise the explanations of our identified terms and ideas. We see that it is not possible to map the picture that empirical observations give us back onto the subject-object distinction. The states of affairs are simply different. Thus I propose a high-level abstract conceptualization of the cognitive situation, which takes into account both the important terms and ideas of philosophical traditions and the important explications of empirical schemes.

Thus I reconstruct the whole cognitive situation so that both conceptual and empirical demands will be satisfied. For that I propose a **tripartite model of cognition**. Instead of distinguishing between subject and object I distinguish between action, language and environment.

Finally, at the end of the third part, I apply this reconstructed cognitive situation to various accounts of truth by relating different truth theories to the reconstructed cognitive situation. Using a tripartite model of cognition, I analyze the benefits and the shortcomings of correspondent, pragmatic and Heideggerian theories of truth. The tripartite model reveals the cognitive and conceptual restrictions of the different theories of truth. Moreover, it shows how we can readjust and combine the benefits of the truth theories to get a clearer and more useful account of truth.

When we apply this model to religious truth, we trace where the problems of truth in religion come from and consider how they can be solved. First of all, *truthfulness is determined in relation to all three parts of the cognitive situation*. Thus, we cannot consider religious truth claims separately from actions they evoke and particularities of the environment where these actions take place. Therefore, we can find reasons why, for certain environments, particular utterances are not actable on, and are therefore considered false. This explains why certain religious truths are never sound for some people or groups and why people sometimes change their beliefs.

So I conclude that the triangle model of cognition and the approach to religious truth that I propose can be accepted for both philosophical and pragmatic reasons. First, this model fits the observations better than the traditional subject-object dualism. It is coherent and fruitful. Second, this approach has ramifications for issues of dialogue between religions and the overall cognitive endeavor.

PART I: CONCEPTUALIZATIONS

1 What is subjective

I start my work by focusing on the main tenets of received models of cognition. Cognition is traditionally understood in dualistic terms of the subjective and the objective, therefore I consider it useful to devote a separate chapter for each of these concepts. First I will investigate the subjective.

The subjective is an indispensable constituent of all the received accounts of the cognitive situation. It is the subject that relates to reality, seeks for truth and evaluates truth claims. The properties of the subject, its structural characteristics, and especially how it is integrated into the cognitive situation and functions within it, determine how knowledge is produced. If there are limitations of the subject, hindering its relations to what is objective, this can affect the truths produced. For example, a Kantian approach emphasizes that there are structural properties that shape our knowledge. Kant also proposes the limit concept of the thing in itself, which we cannot know. From a Kantian point of view all things surrounding us become known to us already structured in accordance with our properties as subjects. Thus, a Kantian subject cannot have immediate access to what is objective and know it as it is by itself.

Moreover, depending on where we put the limits of the subject in the cognitive system we may get various systems. If we determine the subject as belonging to the realm of ideas only, we come to the notion of disembodied subject and of cognition taking place primarily in mind and intellect. This kind of approach was proposed by Descartes together with the following criteria for truth: truth should be clear and distinct to the intellect. The objective world exists and is partly the source of ideas which the subject cognizes. But the Cartesian disembodied subject and its cognition are criticized by theories of embodied cognition.

We may put the limits of the subject in a different way, and claim that there are no real things beyond it. Nothing exists except minds and spirits and their perceptions or ideas, and it is God who brings all the ideas and things to existence, as Berkeley claimed. Berkeley identified being with perceiving in his famous dictum “*esse est aut percipere aut percipi*”. This means that ideas come into being in the act of perception, and material things are thus mere perceptions.¹¹ In this case the resulting philosophical picture is subjective idealism. Therefore, what we can possibly know belongs to the

¹¹ Berkeley, [1713] 1999, 177.

realm of ideas produced by the subject, while the world remains dependent upon our perception. Thus, in Berkeley's picture, truth has nothing to do with the world beyond our ideas.

Thus, depending on our definition of the subject as a part of the cognitive situation, the criteria and definition of cognition and truth will vary. So in order to continue our research upon the cognitive situation we have to solve the following problems in regard to the subject: *where are the limits of the subject, does the subject include a body or not, how does the subject relate to the object.*¹²

I will begin my investigation with solving these problems: what the subjective is, how we can conceptualize and define it against empirical data, and how we can account for its structural properties affecting its relation to the objective. So this task consists of several stages:

1. Sketching the field of inquiry: folk notions of the subjective;
2. Revision of various conceptualizations of the subjective;
3. Overview of empirical results of mind sciences and phenomenology in regard to cognition;
4. Critical revision of the idea of the subjective given folk notions about the subject, certain conceptualizations, and empirical results.

The first two tasks will be completed in this chapter. The third task requires an introduction of the objective, given that in cognition the objective interacts with the subjective; cognitive processes, for example perception, involve both subject and object. We need a clear conceptual account of both the subjective and the objective to approach the instances of their interaction. Thus, the third and fourth tasks are accomplished after the conceptual work on the objective is presented.

1.1 Sketching the field of inquiry: folk notions of the subjective

The first stage is to sketch the main field of my inquiry along with the concepts I deal with in my investigation relating to the subjective. To start any philosophical research we need to ask ourselves first: what are we looking for? What could its special features be that allow us to distinguish it from other things? In order to answer these questions I first provide a provisional notion based upon folk ideas about the subjective. Why do we need to have

¹² It is necessary to mention at once that I limit my research to a consideration of human subjectivity only. All other types of subjectivity, such as a Divine Subject or animals as subjects, are outside the scope of this investigation. Subjects of that type require quite different approaches and tools.

some preliminary concept to rely upon in a research task? The reason is simple: if we are looking for something, we have to know what we are looking for. This requires the usage of at minimum preliminary notions about the focus of our research.

This kind of conceptual work is supposed neither to provide definition, nor to give some criteria of the subjective. Instead, it is aimed at elucidating limits and epistemic functions of the subjective in its relation to the objective. Thus, by bringing in folk ideas of the subject I am going to set up a background against which I will be able to test the concepts I introduce. We will see how these concepts explain the issues grasped by folk notions.

This step of defining preliminary concepts under consideration is inspired by Michael P. Lynch who has proposed this strategy in his research on truth.¹³ He has chosen for the starting point of his study folk beliefs, holding them as a nominal essence of the concept he is investigating. The application of folk beliefs is intended to secure that the theory he is working on is a theory of truth as opposed to being about some other thing. Here is his justification for such an approach:

The nominal essence of F, in the sense I intend, is our folk concept of F. It embodies our preconceptions, the way we tacitly think about it in ordinary life – even if, normally, we don't even recognize ourselves as doing so. A natural way of identifying something's nominal essence, therefore, is to appeal to the set of largely implicit beliefs we folk have about it.¹⁴

So Lynch is relying upon our intuitions in making preliminary definitions of the concept under investigation. He also states that some of these intuitions or beliefs could be revised or even explained away by a philosophical theory. But in such case the theory must supply sufficient reasons for that and ensure that the theory is still about the same issue, and not of some other.

It is justifiable to do much the same as Lynch does for figuring out provisional notions of the subjective. So I will use the common sense ideas about the subject and the subjective in the quest for truth and knowledge. First of all, a subject, according to folk notion, is **human**. But not every property of human is considered by us folks as related to us as cognizing subjects. We are not only cognizing, but also creative, emotional, political, and sexual beings (to mention some human properties). Only the properties involved in our cognitive relations with the objective are considered relevant for the human quest for truth. So in order to make the folk notion of subject more precise, I add some common-sense features characterizing subject in the process of cognition. A subject is usually held as:

A. Relating to the world;

¹³ Lynch, 2009.

¹⁴ Lynch, 2009, 7–8.

- B. Having ability to cognize, know and understand;
- C. Something “subjective”, personal: a kind of individual perspective, distinguishing what is known by a certain subject from what is public knowledge.

A. In ordinary life we usually believe that the subject is not isolated within its limits. Subjective idealism is a rare case in philosophy and even more rare in everyday life. But still it is worth consideration. We can describe Berkeley as a paragon of subjective idealism. According to his idea, there is no real world beyond our senses. Matter does not exist. Things come to being as we perceive them. In this case, we do not have access to the world beyond our senses and all our knowledge belongs to the realm of ideas.

But subjective idealism cannot be called a folk belief. Our actions are based on a tacit supposition that the world beyond our senses really exists. We live and behave as if the things we perceive were real objects. We do not give poison to our kids claiming that poisonousness is a mere perception, unable to do any harm. If we do, we are considered not Berkeleians, but simply crazy. The common belief is that there is an objective world and that subjects somehow have the ability to know what is objective. The understanding of the exact mechanism of relation can vary, from remembering Platonic ideas, to co-existence of subjective and objective in embodied perception in the philosophy of Merleau-Ponty. These mechanisms are to be investigated a bit further. For now, we can just claim that there is some kind of access to the objective, which is a characteristic of the subject.

B. A wide range of mental or intellectual capabilities is also a “must” for any kind of subject. In order to cognize, in order to compare and evaluate, and finally to know, a subject must have sufficient mental facilities. Intellectual capabilities distinguish human beings from the rest of beings that have a kind of access to the world but cannot reflect upon it. We do not merely perceive a thing, but we are also aware of the perception and can reflect upon it and distinguish between correct perceptions and mere illusions. These intellectual abilities allow us to know.

Although language as a special ability could be listed among mental capabilities, I have decided to distinguish it as a separate category to be accounted for mostly in the section dedicated to the objective. There are several reasons for doing this. First of all, a special role of language in cognition and the quest for truth is revealed in the aforementioned words of Aristotle: “To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, and of what is not that it is not, is true”. Aristotle speaks about saying, not just seeing or perceiving. Thus, the emphasis is put on speech, which is made with the help of language. So, the truth about the objective is revealed with the help of language, and language cannot be accounted for solely as a property of the subject. Secondly, looking a few steps

forward, I will show that language is an entity that can be accounted for from the perspectives of both the subjective and the objective. It is conceived by Wittgenstein and some other analytic philosophers as what exhibits the structure of the objective.¹⁵

Moreover, the objective itself is seen by many analytic philosophers as facts to be said within language. So language is conceived as what is grasping both the structure and the factual contents of reality. Thus, I must give special consideration to issues of subjective and objective concerning language and its functioning. Additionally, I must distinguish language as a capability inherent to humans from language as a separate system with semantics and logics built into it. In chapter 6 I will consider language as a human capacity and a means of communication, that are indispensable in human cognition. As we could hardly impart knowledge without language or be raised as intellectual human beings at all, because language is inherent in thinking, I must account for the subjective properties of language. Thus, here I consider linguistic capabilities as a unique property of humans among other intellectual capabilities. In chapter 2 I will investigate language as it accounted for by Wittgenstein. There I will consider the structure of language and the way it is related to reality.

C. The individual space, or perspective, is sometimes considered as a main feature of the subjective, as opposed to the objective. What seems to me true from my subjective perspective quite often turns out to be false and not objective. My judgments could be biased, due to lack of information, or a certain angle of my individual perspective. This feature also distinguishes subjective from intersubjective. My dreams and hallucinations belong solely to my individual perspective. There is some space of personal experiences that can be shared with other people, if only partially.

So we now have the main features of what a subject is. In the following conceptual work and revision of the cognitive situation these truisms must be “explained or explained away”, as Lynch suggests.¹⁶ Keeping these intuitions in mind, I will now make a brief overview of the concepts of the relevant philosophical systems concerning the subject. I have chosen those of Descartes, Kant and Merleau-Ponty, because they are distinct and reveal major ways of dealing with the subject. These philosophers do not define the subjective as an isolated issue; instead they describe it being integrated in a whole epistemic system, where subjective relates to objective in a certain way. This is convenient for my investigation, as we can trace all the implications of these concepts for the tension between objective and subjective

¹⁵ Wittgenstein, *Tractatus Logico-Philosophicus*, §4.01.

¹⁶ Lynch, 2009, 18.

straight away. But I will highlight the features of the subject that have to do with the cognitive situation of humans and with truth.

1.2 Conceptualizations of the subjective

To fulfill the **second stage** of my task, which is a revision of various conceptualizations of the subjective, I have to start with clarification of what I am going to do and for what purpose. I will not try to provide an exegesis or even an interpretation of the whole of Kant's, Descartes' and Merleau-Ponty's thinking. Less will I present a new reading or precise scrutiny of possible flaws in their ideas. My aim here is to grasp their main and distinctive ideas regarding the subjective and cognition. That is why I will emphasize the most important points, crucial for understanding the roots of empirical enterprises, which I will consider later. Also I will show which parts of their systems I am going to adopt for my re-conceptualization.

Here I consider classical Cartesian and Kantian perspectives of the subject and cognition, as these have considerable influences upon philosophy of mind and epistemology. Moreover, their ideas have inspired the empirical investigations relevant for this research. So it is useful to compare the results of the empirical investigations with the philosophical systems that inspired them. Special emphasis is put on the Kantian ideas, as they are used as models of human cognition by cognitive science.¹⁷

Then I will turn to the phenomenological account of the subject and cognition, primarily to the ideas of Merleau-Ponty. His ideas about perception and cognition are not only insightful and ingenious; additionally they are being revisited nowadays in philosophy of mind and cognitive studies. The reason for this re-introduction of the ideas of phenomenology and especially those of Merleau-Ponty is their potential for constructing new approaches in philosophy of mind and of cognition.¹⁸ The idea of embodiment proposed by Merleau-Ponty is currently one of the most fruitful and promising in various veins of philosophy. This major shift of both attention and theoretical schemes towards the embodied nature of humans and of cognition in various disciplines can be called the *corporeal turn*, which can be considered equal in its importance to the linguistic turn.¹⁹ The investigations of embodied cognition cannot only be conveyed on a theoretical level, they have also to include empirical studies. Thus, phenomenological ideas of Merleau-Ponty

¹⁷ It might be objected that a Kantian subject is not an empirical subject. Nevertheless, philosophical concepts and schemes proposed by Kant were used as models for empirical purposes in scientific investigation. Brook, 2007, 117.

¹⁸ Dreyfus, 1996; 2002, 367; Kelly, 2001, 152; Noë, Thompson and Pessoa, 1999, 161; Froese, Gallagher, 2010, 86; Overgaard, Gallagher and Ramsøy, 2008.

¹⁹ Sheets-Johnstone, 2009, 2.

are now used as bridges between theoretical and empirical studies of the subject. That is why his ideas are important for my investigation. They will form a foundation of the third stage of my research.

So let us start with an introduction into the history of the concept of the subject. The first to present the importance of the subject in cognition was Protagoras, emphasizing on subjectivity: "Man is the measure of all things: of things which are, that they are, and of things which are not, that they are not".²⁰ But he was opposed by other philosophers who believed that there are states of affairs independent of human beings.

It is also worth mentioning that another step towards the development of epistemology was made by Parmenides. He claimed the identity of being and thinking: "It is the same thing to think and to be", or "Thinking and being are the same". This meant that the subject was endowed with a special power of knowing things that exist. It is hard to draw further ramifications from this phrase by Parmenides, as he wrote in an obfuscatory manner. Usually his words are interpreted either in an idealistic or realistic way, emphasizing respectively the first or the last part of the above equation.²¹ Nevertheless, we can see that Parmenides has endorsed thinking as a legitimate and correct way of knowing being. Thus, in this early account of the subject and the cognitive situation we can distinguish among at least two truisms about the subject, that are bound together. Here the relation to the world (A), which we stipulated as one of the main features of the subject, is provided by thought (B). The philosophical enterprise of reaching the truth has continued for many centuries in this vein of emphasizing thinking. Problems of language were of almost no interest for philosophers.

The starting point for philosophical investigation of the subject and its role in cognition was the metaphor of mirror and seeing. In Greek philosophy, Plato and Democritus introduced this metaphor to depict the process of cognition. The metaphors and notions of intellect as an Eye of Mind began to flourish in Western philosophy in modern time. It was believed for a long time that the subject reflected the objective world like a mirror reflects all the objects in front of it.²² This reflection may involve distortions (a mirror changes left and right, for example²³) that arise due to imperfections of the mirror in comparison to the original. But mirroring is nevertheless a reflection – a passive process. This understanding of cognition in terms of reflection has to do with the notion of sight as the main instrument of cognition, common for modern philosophy. Sight was depicted as a Divine Gift to humanity, enabling all the other ways of cognition. During many centuries

²⁰ Plato, *Theaetetus*, 152a.

²¹ Henn, 2003, 57.

²² This idea has found its paragon expression in the philosophy of Leibniz (*Monadology*, paragraph 56). Leibniz compares each monad to a living mirror, reflecting the world around it.

²³ Plato *Theaetetus*, 193C.

epistemology has used vision metaphors like clarity, light or reflection to describe and explain cognitive processes.

1.2.1 The Cartesian disembodied subject

The most influential and long-lived conceptualization of the subject, introduced by Descartes, follows the same manner of thought, with the emphasis on vision and visual metaphors of cognition. Descartes' famous criteria for correct judgments are exactly the same as are usually applied to describe the quality of seeing: clarity and distinctness. Certainty of cognition means that my perception is guided by "a great light in the intellect".²⁴ This rational illumination empowers me to "see utterly clearly with my mind's eye".²⁵

Descartes proposed a radical dualism of subject and object, claiming that the subject is *res cogitans* (thinking substance), while the object is *res extensa* (extended thing). They are ontologically different, therefore. These very clear definitions, however, produce a serious conceptual problem. If body and mind are totally different substances, how is cognition of the world possible? How does access by the thinking substance to the extended substance take place? To solve this problem Descartes proposed an intricate idea of cognition, allowing the whole process to take place mainly in the domain of ideas. Cognition occurs on an intellectual level and real objects are considered by Descartes as mediators of ideas. According to Descartes, ideas are a mode of existence of real objects in thinking, for example the idea of the sun: "... [T]he idea of the sun is the sun itself existing in the intellect — not of course formally existing, as it does in the heavens, but objectively existing, i.e. in the way in which objects normally are in the intellect."²⁶

Here we can see that Descartes conceived of the idea of the thing as the objective existence of the thing in the intellect. Thus, cognition of the thing does not require us to leave the grounds of *res cogitans*. As the sun can objectively exist in the intellect, as well as in the sky, we can cognize it within the domain of intellect and ideas. The subject looks at the world in order to find out the ideas of things, which belong to the same domain as thoughts. So material objects pose no interest in themselves, rather ideas are what a philosopher is looking for and are the real objects of cognition. Descartes sees no ontological difference between innate human ideas and ideas resulting from perception of the outer world:

Among my ideas, some appear to be innate, some to be adventitious, and others to have been invented by me. My understanding of what a thing is, what truth is, and what thought is, seems to derive simply from my own nature. But my hearing a noise, as I do now, or seeing the sun, or feeling the fire,

²⁴ Descartes, Fourth Meditation, 7:59.

²⁵ Descartes, Third Meditation, 36.

²⁶ Descartes, First Replies, 102–103.

comes from things which are located outside me, or so I have hitherto judged. Lastly, sirens, hippogriffs and the like are my own invention.²⁷

Descartes uses this workaround, but this does not help to overcome the radical difference between subject and object, it provides too weak a link to connect them. Moreover, Cartesian ontology cannot account for the basic unity of *res cogitans* and *res extensa* in humans. As Descartes writes, he cannot explain the unity of subject and object, body and mind.²⁸

This puzzling inability of Descartes to account for the basic unity in the body was emphasized later by Merleau-Ponty, whose main interest was to solve this puzzle and provide a new account of the body.²⁹ Also addressing the Cartesian way of separating the inner realm of mind from outer realm of body are feminists, for example arguing that it is because the “Cartesian self is locked within the inner, his foothold on the outer weakens to the point where one might well doubt its very existence”.³⁰ This stance leads to “madness of skepticism”, which separates subject from the world and other humans.³¹ Radical dualism thus has serious implications for cognition and human attitudes towards the world and other humans. As subjectivity is established only through self-reflection, we cannot do the same to establish the subjectivity of other humans. Thus, Descartes’ subject is highly individualistic.

So Descartes’ conceptualization is problematic at the point of relation of the subject to the world (common-sense feature A), and (B) appears to belong to the same intellectual properties of the subject. Descartes is well aware of the hindrances posed by the individual perspective (C), as his rumination about a demon falsifying the sensual experience shows. But he solves this problem by introducing a good omnipotent God, disallowing the demon to falsify all the senses. Additionally, as Descartes is interested in the cognition of ideas of things, which are not affected by individual perspectives, this does not pose a problem for him. In the Cartesian interpretation of knowledge as a reflection of objects upon the subject, the dualism of objective and subjective is very strong. The subject is detached from the world and other humans, and cognition takes place on intellectual level in the domain of ideas.

1.2.2 The Kantian approach

Kant was the first philosopher to interrupt this whole line of thinking about cognition in naive terms of reflection. Kant has made a paradigm shift in

²⁷ Descartes, Third Meditation, 37–38.

²⁸ Descartes, To Elizabeth, 690.

²⁹ Merleau-Ponty, [1945] 2002, 49.

³⁰ Tanesini, 2004, 7.

³¹ Bordo, 1987, ch. 1–4.

philosophy equal to the Copernican shift in natural science. He claimed that the subject in fact constructs the objects instead of simply reflecting them. Kant provided a description of the mechanism of this construction. He deemed that we have a priori categories like time, space, quantity, cause, etc., according to which we make our notions of the world and things in it. Yet Kant preserved the classical view of the subject as an agent transcendent to the objective world. The cognizing subject in the Kantian view is affected only by innate intellectual features, not by a body and its physical properties. The main Kantian conceptions of the subject and cognition are these:

- The mind is complex set of abilities (functions).
- The crucial functions for mental, knowledge-generating activity are spatio-temporal processing of, and application of concepts to, sensory inputs. Cognition requires concepts as well as percepts.
- These functions are forms of what Kant called synthesis. Synthesis (and the unity in consciousness required for synthesis) is central to cognition.³²

At the same time, Kant stated that there is no such thing as knowing what something is in itself. According to Kant, matter is the appearance of a completely unknown substratum. As he explains it in the *Critique of Pure Reason*, the rainbow is a mere appearance relative to rain drops, which in a physical sense are things-in-themselves and not mirages. Yet thinking further, we realize that the raindrops are mere appearances, and that “even their round form, indeed, even the space through which they fall are nothing in themselves, but only mere modifications or foundations of our sensible intuition; the transcendental object, however, remains unknown to us.”³³ “About these appearances, further, much may be said a priori that concerns their form but nothing whatsoever about the things in themselves that may ground them.”³⁴ This suggests that the stuff that is divisible to infinity and bears attractive and repulsive forces is an appearance of something unknown and unknowable:

We can understand nothing except what brings with it something in intuition corresponding to our words. When we complain that we do not see into the inner nature of things, this can mean no more than that we cannot grasp, through pure reason, what the things that appear to us might be in themselves.... Observation and division with respect to the appearances take us into the interior of nature, and we cannot say how far this will proceed. But every transcendental question that takes us beyond nature can never be answered....³⁵

³² Stanford Encyclopedia of Philosophy. <http://plato.stanford.edu/entries/kant-mind/>

³³ Kant, *Critique of Pure Reason*, [1781] 1998, A45 f./B 63f.

³⁴ Kant, *Critique of Pure Reason*, [1781] 1998, A49/ B66.

³⁵ Kant, *Critique of Pure Reason*, [1781] 1998, A277f./B333f.

So we can trace the changes of the concept of the subject in Kantian philosophy, in oppositional relation to Descartes'. Nevertheless, the world as it is remains unknown and detached from the subject. Kant wants us to stop worrying about that which is detached from the subject and focus on that which is not detached. According to Kant, to even perceive an object is to conceptualize experience in a certain way. This means that we cannot consider an object as it is independently of our conceptualizations. We can only consider objects as they appear to us. The result is a type of internalism: all thought and talk about the world is internal to our conceptual scheme.³⁶ Kant proposes the idea of a priori categories mediating our cognition, but this only shifts the focus of cognition, leaving the world as it is even less known than with Descartes. So in a sense Kant deepened the gap between world and human. He makes the objective and the subjective the distinctions *within* experience. What is outside of experience is nothing for us, it is not even objective.

The Kantian perspective has some problems with its core idea of subjective structures mediating cognition. It is unclear what the nature is of these structures on empirical and theoretical levels. How exactly do these structures function in the process of cognition? Is there one kind of such a structure, or many of them?

Various philosophical traditions have taken up the idea of some form of conceptual scheme shaping all our knowledge and cognition. Quine, Wittgenstein, Putnam, Kuhn, Lynch and many others developed this idea and created distinct accounts of it. Quine and Wittgenstein relate conceptual schemes to languages. From a Quinean point of view conceptual schemes in fact consist of sentences, which we hold as true.³⁷ Wittgenstein uses the metaphorical structure of a river of language and riverbeds of hardened propositions to show the relation of a priori and a posteriori in language. This metaphor is interpreted by Lynch as a description of the functioning of a conceptual scheme.³⁸ And finally, Michael Lynch attempts to combine the best of the Kantian and the Wittgensteinian models developing the Wittgensteinian idea of worldviews.³⁹ According to Lynch, conceptual schemes are themselves parts of an organic whole that he calls a "worldview". So there are lots of attempts to provide answers to the aforementioned problematic questions.

There is also a critique of the very idea of conceptual schemes, developed by Donald Davidson.⁴⁰ Based on his identification of conceptual scheme and

³⁶ Lynch, 1998, 11.

³⁷ Quine, 1981, 41.

³⁸ "The river-bed of thoughts may shift. But I distinguish between the movement of the waters on the river-bed and the shift of the bed itself; though there is not a sharp division between one or the other." Wittgenstein, *On Certainty*, 15e.

³⁹ Lynch, 1998, 51.

⁴⁰ Davidson, [1974] 2001, 183–199.

language, he develops an argument against the notion of the incommensurability of various conceptual schemes. He claims that if one can point at the differences between the schemes, they are not incommensurable.

Kant's ideas about the relation of concepts to sensory input and the functional nature of the mind became the dominant model in empirical psychology and cognitive science in general. For this reason Andrew Brook calls Kant "an intellectual grandfather of contemporary cognitive science".⁴¹ Despite the fact that Kant deals with the problem of cognition on a priori level, cognitive science uses his ideas as an inspiration for empirical research. They investigate empirically the concepts shaping our sensory input (which Kant himself might not approve). Nevertheless, when speaking about the findings of cognitive science we have to keep in mind the Kantian model of cognition as background.

Thus, with the help of this short introduction into Kantian philosophy of the subject and cognition, we can devise a concept of the subject on which cognitive science bases its theories. The Kantian subject is almost identical to the mind with all its intellectual capabilities, first of all with reason (B). Thus, the relation of cognizing subject to the world is *through inner cognitive structures*.⁴² That is why the main focus of cognitive science is on the inner design of the subject, allowing it to cognize objects. The Kantian subject, just as the Cartesian subject, is strictly detached from the object cognized. While Descartes holds that our cognition grasps the core of things – their ideas – Kant claims that an object cannot be known as it is in itself.

Kant believes that knowledge is universal, which means that if judgment counts as knowledge, it should be valid for all humans.⁴³ This holds for theoretical judgments, practical ones, and even for judgments of taste.⁴⁴ In his explication of *sensus communis* (common sense), Kant proclaims the universality of cognitive capacities. The individual perspective (C) and the diversity of empirical judgments of taste result from a *free play of our faculties of cognition* (B). But on the level of a priori we all share the same cognitive capacities, which means that knowledge should be universal.

In fact, it may well seem that from the Kantian perspective all possible knowledge is subjective, with one reservation: there is only one kind of subjectivity concentrated in a priori categories. This common subjectivity is a

⁴¹ Brook, 2007, 117.

⁴² Here I am not speaking about the practical subject in Kant's thinking. The practical subject and practical reason relates not to the world, but to the subject. Thus, this is a special kind of knowledge, where the subject "makes itself its own object". Engstrom, 2009, 122.

⁴³ "In all judgments by which we declare something to be beautiful, we allow no one to be of a different opinion, without, however, grounding our judgment on concepts, but only on our feeling, which we therefore make our ground not as a private feeling, but as a common sense." Kant, Critique of the Power of Judgment, 5:239. This does not mean that everyone would agree with my judgment, "but that everyone should agree with it".

⁴⁴ Kant, Critique of the Power of Judgment, 5:238.

property of all subjects, so it is intersubjective as well. Thus, from the Kantian perspective, knowledge is universal.

1.2.3 Challenge to the classical conception of the subjective: phenomenology

An absolutely new approach to cognition and the subject was proposed by phenomenology. Phenomenology departs from Cartesian and Kantian pictures of cognition and the subject and makes a great philosophical contribution to the understanding of cognition and perception.

Phenomenology has started to challenge the traditional picture of the epistemological situation and especially conceptions of a disengaged knowing subject. The father of phenomenology Edmund Husserl proposed a turn from investigation of the objectified world to immediate experiences. But still, Husserl has not departed from previous epistemology because of his distinction between the inner and the outer: the “immanent” sphere of conscious experience and the “transcendent” domain of external objects. It was Maurice Merleau-Ponty, who adopted the Heideggerian idea of *In-der-Welt-sein* (being in the world) and made the radical step towards integration of subject and object.

Although Merleau-Ponty’s drastically new account of the subject was not quite Husserlian at its core, his phenomenology was inspired by the Husserlian program. In the seminal work, *Phenomenology of Perception*, Merleau-Ponty embraces the Husserlian project of reshaping cognition and knowledge, changing the traditional positions:

The physicist's atoms will always appear more real than the historical and qualitative face of the world, the physico-chemical processes more real than the organic forms, the psychological atoms of empiricism more real than perceived phenomena, the intellectual atoms represented by the 'significations' of the Vienna Circle more real than consciousness, as long as the attempt is made to build up the shape of the world (life, perception, mind) instead of recognizing, as the source which stares us in the face and as the ultimate court of appeal in our knowledge of these things, our *experience* of them. The adoption of this new way of looking at things, which reverses the relative positions of the clear and the obscure, must be undertaken by each one for himself, whereupon it will be seen to be justified by the abundance of phenomena which it elucidates.⁴⁵

But at the same time, what he proposes can be called a total departure from the Cartesian model of the subject that Husserl embraces. It is a new approach to perception and the subject, which could be considered as a new Copernican turn. This departure has a different direction than the Kantian

⁴⁵ Merleau-Ponty, [1945] 2002, 26–27.

turn. Merleau-Ponty introduces an idea of “body-subject” and strives to show that the subject is, in fact, embodied, which means that the body is central in human experience.

Merleau-Ponty criticizes Kant for the equation of the subject to “a consciousness which embraces and constitutes the world”. He claims that this causes Kant “to overlook the phenomenon of the body and that of the thing”.⁴⁶ According to Merleau-Ponty, cognition takes place not in the mind. Instead, it is the body that is already in the world, understanding the world without mediation of symbols and representations. The body is the center of all our experiences. Approaching the problem of relation of subject and object in cognition and perception, Merleau-Ponty proposes a vision of indissoluble unity of subject and object. Both subject and object are just abstractions of primordial being-in-the-world. This means that there is a primordial unity of the subject with the world provided by the embodied nature of consciousness. As Merleau-Ponty states in the introduction to “Phenomenology of Perception”:

Truth does not 'inhabit' only 'the inner man', or more accurately, there is no inner man, man is in the world, and only in the world does he know himself. When I return to myself from an excursion into the realm of dogmatic common sense or of science, I find, not a source of intrinsic truth, but a subject destined to the world.⁴⁷

Thus we see the radical difference from Cartesian or Kantian approaches: there is no strict detachment of the subject from objects. There is an intimate link between subjective and objective provided by the human body. Merleau-Ponty shifts our attention from Cartesian subject and Kantian a priori concepts to a perception of the world and being in the world.

Moreover, the subject in the Merleau-Pontean account is not individualistic anymore. We must regard the social world “not as an object or sum of objects, but as a permanent field or dimension of existence”.⁴⁸ Our consciousness depends upon our consciousness of others, which is given to us in their behavior and speech.⁴⁹ Linguistic abilities are necessary for self-consciousness, communication and intersubjectivity. And unlike Descartes or Kant, Merleau-Ponty does not consider knowledge as universal. He rejects the vision of humanity as “an aggregate of individuals, a community of thinkers, each of whom is guaranteed from the outset to be able to reach agreement with others because all participate in the same thinking essence.”⁵⁰ The introduction of intersubjectivity makes our human situation

⁴⁶ Merleau-Ponty, [1945] 2002, 353.

⁴⁷ Merleau-Ponty, [1945] 2002, xii.

⁴⁸ Merleau-Ponty, [1945] 2002, 421.

⁴⁹ Baldwin, 2004, 27.

⁵⁰ Merleau-Ponty, [1948] 2004, 87.

“precarious”: “each person can only believe what he recognizes to be true internally and, at the same time, nobody thinks or makes up his mind without already being caught up in certain relationships with others, which leads him to opt for a particular set of opinions”.⁵¹ Thus, subjective and intersubjective are intertwined in our cognition and diversity is a natural quality of humanity.

Let us now recall the truisms about what is subjective against which we test the conceptualization of the subject, to see how the phenomenology of Merleau-Ponty accounts for them. A world is given to us, as we are always a part of it. A relation to the world (A) is in fact not a relation, but a being in the world, an intimate unity of objective to subjective in a human body. Our ability to know (B) is provided first of all by the human body, which is “a natural self and, as it were, the subject of perception”.⁵² Mental capabilities are immersed in the domain of the objective world and cannot be detached from it.

Although phenomenologists sometimes express criticism of empirical research, quite explicit even in the quotations of Merleau-Ponty presented above, phenomenological insights are used in empirical science. Just as happened with Kantian models and ideas, Merleau-Ponty’s were adopted by empirical researchers. The developing trend in mind sciences, which considers cognition as embodied, embedded, enacted, and extended, definitely inherits the ideas of Merleau-Ponty and some other phenomenologists. Sean Kelly considers phenomenology’s endeavor, toward metaphysical, presupposition-free description of immediate experience, very convenient for integration with the sciences, aiming at conceptualization and explanation.⁵³

Sean Kelly summarizes the aim of phenomenology in the following passage:

What, then, is the descriptively complete and accurate account of perception and action that phenomenology endorses? One central aspect of it is certainly this: that any complete and accurate description of normal perceptual or behavioral phenomena leads to the denial of a private, inner subject who experiences a transcendent, outer world. In place of this roughly Cartesian picture, the phenomenologist holds that perceptual and behavioral phenomena take place in the context of what the psychologist J. J. Gibson calls the “organism-environment system”; in phenomenological terms they are attributed not to the Cartesian subject, but to “open heads upon the world” (Merleau-Ponty) or simply to “Dasein” (Heidegger). Very crudely what this means is that if I’m having a perceptual experience of an apple, I cannot completely and accurately describe this experience without at least some reference to the very apple I’m having an experience of. Because the apple and the experience of the apple are intertwined in this way, we would be misdescribing the perceptual

⁵¹ Merleau-Ponty, [1948] 2004, 87.

⁵² Merleau-Ponty, [1945] 2002, 239.

⁵³ Kelly, 2001, 152

phenomenon (equally, the content of the perceptual experience) if we said it was attributable to a completely independent, inner self.⁵⁴

So a Merleau-Pontean account of the subject looks more optimistic than either Cartesian or Kantian concerning evaluation of possibilities to know the world, as the Merleau-Pontean subject is not detached from the object. This unity of the subject and object in the human body can be seen as a strength, as it resolves some of the problems arising from dualism. Moreover, we can ask: if subject and object are united, do we need to maintain a dualistic approach to cognition at all? If subject and object cannot be conceptually detached, perhaps we should look for other concepts to describe cognitive relations.

On the other hand, a Merleau-Pontean way of presenting cognition makes a solution of the problem of cognition and truth more difficult. Merleau-Ponty considers the diversity of truth claims as a natural precariousness of the human situation. He states that we are “continually obliged to work on our differences, to explain things we have said that have not been properly understood, to reveal what is hidden within us and to perceive other people”.⁵⁵ But he does not give us any philosophical tools to work on these differences and to address the diversity where it turns out to be a problem, as in religion.

1.3 Summary

So in this chapter I have completed the first two stages of my investigation of the subject:

1. Sketching the field of inquiry: folk notions of the subject.
2. Revision of various conceptualizations of the subject.

Now we have the folk notions of the subject against which to check sophisticated philosophical conceptualizations. So the concept of the subject must explain the following issues:

- A. Relation to the objective world;
- B. Ability to cognize, know and understand;
- C. “Subjective”, personal perspective or space, distinguishing what is known only to a certain subject from public knowledge.

⁵⁴ Kelly, 2001, 151.

⁵⁵ Merleau-Ponty, [1948] 2004, 88.

We can see that although Cartesian, Kantian and phenomenological conceptualizations are fruitful, they still give rise to certain problems.

- I. Descartes' solution in terms of a radical distinction between subject and object as *res cogitans* and *res extensa* cannot explain how the subject can possibly relate to objects, if subject and object belong to different substances. It is even less clear how bodily experiences, such as perception, which include intimate interaction between subject and object, are possible. So the access to the world (A) remains unexplained.
- II. The Kantian introduction of conceptual schemes that mediate cognition leaves reality in itself unknown. It changes the conceptual distance between subject and object constructed by Descartes, but leaves the object as it is for itself as a limit of our knowledge. Moreover, it is not clear what the conceptual schemes in the Kantian model are and how they function. So here the main focus is mental capabilities (B), which in the Kantian model provide access to the world (A).
- III. Merleau-Ponty provides an ingenious account of the intimate subject-object unity. This perfectly explains the access to the world (A), problematic for other accounts. But the strong subject-object dualism is thereby undermined.

Thus we see the continuities and discontinuities in philosophic thinking on the subjective. The Cartesian subject as *res cogitans* is purely rational and detached from the object, cognizing the ideas of the things. The Kantian subject is also rational, but it cognizes differently: there are a priori cognitive structures that shape cognition of the object. Having these structures introduced, Kant has left us without any hope of ever uncovering the world. He has put the notion of a thing for itself as a limit of our cognition. We cannot go beyond this limit.

Merleau-Ponty criticizes the Kantian equation of subject to intellect and proposes a different picture, on the one hand more optimistic for knowledge-seeking. In his account the subject and object are united in body, and our being is being in the world. Therefore, the idea of the subject-object unity in body overcomes radical dualism and provides a ground for a new conceptualization of cognition. But on the other hand, as the body is central for our cognition, this leads to multiple perspectives and opinions. This raises a problem of conceptually accounting for diversity of knowledge and that of truth claims.

So I choose the Kantian and Merleau-Pontean accounts of the subject as the most promising and fruitful in the description of the cognitive situation. I will use the ideas of mediation of cognition and of subject-object unity in

cognition for a non-dualistic model. The question of the Cartesian subject and *res cogitans* as separate substance will also be raised in chapter 8.

Meanwhile, I have to consider conceptual accounts of the objective and then turn to a revision of the interrelation between subject and object in cognition. I will test which parts of the aforementioned conceptualizations fit empirical results better and which fit worse. We will see the results of the application of these philosophical ideas in empirical sciences and what they reveal to us about empirical correlates of these ideas.

So here I have settled the philosophical and commonsensical grounds for the solution of the problems stated in the beginning of this chapter: *where are the limits of the subject? Does the subject include the body or not? And, how does the subject relate to objects?*

2 What is objective

Here I'm going to limit the scope of the investigation of the problem of the objective as a part of a cognitive system. I have decided to do the same job I have already done in relation to the problem of the subject. First, I will consider the objective as a concept and provide a conceptual refinement of the objective as a counterpart to the subjective in cognition. The preliminary goal at this stage is to adequately account for this concept for the subsequent philosophical considerations. Here the investigation starts with a formulation of the truisms connected to this concept and continues with the overview of relevant accounts of philosophical traditions focusing upon the objective. The aim of doing this is to compare distinct approaches to the objective in order to reveal what is fruitful and what is problematic, and to know their presuppositions and scope before addressing the empirical issues of the tension between the objective and the subjective. So both empirical and conceptual aspects will be treated in this investigation.

There are several issues that should be solved in relation to the objective: *Where are the limits of the objective? Is it completely independent from the subjective in cognition? What is the nature and structure of the objective?* The first problem in relation to the objective, just as in relation to the subjective, is the problem of limits. What should be included in this term? Does the objective incorporate social realities, such as state, law, money, etc.? If we follow a strictly materialistic trend, we should delimit the objective to material things only. Such things as state and money should be considered as the products of human imagination and convention and not as objective reality. On the contrary, if we follow radical social constructivists' ideas about the objective, we come to the notion of the objective as completely constructed by subjects. Social constructivists believe that everything to which we have access in our life, all our knowledge and environment, except the so-called "brute facts" of physical origin, are created by mutual social interactions.⁵⁶ Moreover, the proponents of strong social constructionism deny even the existence of brute facts, claiming that it is social interactions which distinguish certain parts of reality and attribute to them names and proper-

⁵⁶ Berger and Luckmann, 1966, 59–61.

ties.⁵⁷ Thus, there is nothing in our knowledge about the world that could be considered really independent and detached from the subject.

Consequently, the structure of the objective is also rendered by different traditions in various ways. The objective can be considered to consist of material objects and their interactions (scientific realism); of social interactions and their products (social constructionism); and finally, of facts instead of things. The last option is proposed by some analytic philosophers who render the objective in a linguistic way. They consider language as a kind of picture revealing objective states of affairs. “The proposition is a picture of reality”, Wittgenstein stated.⁵⁸ This means that language in a sense has the same structure as reality does. Thus, the objective turns out to be revealed in and through language.

Here I will review representative examples of scientific realism, social constructivism and analytic philosophy in regard to the objective, and consider which are most appropriate for a coherent description of the cognitive situation. I have chosen the most vivid and distinct philosophers to reveal the differences between approaches. I will consider Berger and Luckmann, Latour and Woolgar as representative examples of social constructivism; Wittgenstein and his reception in logical positivism (Stenius) and feminist critique (Tanesini) as representative examples of analytic philosophy; and Lepplin, Rescher, and Kukla for scientific realism. We will see how the philosophers attempt to solve the aforementioned problems related to the objective, which criteria of objectivity they apply, and for which reasons.

Then I will turn to the investigation of relations between subjective and objective on the experiential level. This will allow us to see how the conceptualizations of various philosophical traditions come to life in cognitive processes accounted for by the sciences. As we suppose that there is an objective world that we can relate to through experience and physical action and not just rumination, I am going to use the wide range of practical data gathered by sciences. We will consider how the conceptions of subjective and objective could be applied to what we experience empirically: a world around us, our senses and thoughts. Here the main focus will be on the empirical and experiential issues. I will provide an account of the experiential aspects of such issues as perception, verification, and problems related to the objectivity of language – such as intentionality, and the ability of language to relate to reality. The empirical part of my investigation is supposed to show how we can possibly combine various conceptualizations and what problems become apparent in the application of these concepts of subjective and objective to experiential issues of cognition. Then, against these data the conceptions and concepts of the subjective and the objective are to be reexamined. We will see how well they serve as the basis for theories and expla-

⁵⁷ Gross and Levitt, 1994.

⁵⁸ Wittgenstein, *Tractatus Logico-Philosophicus*, §4.01.

nations of observed reality. So the sequence of tasks is similar to the one I have devised for dealing with the subjective:

1. Sketching the field of inquiry: folk notions of the objective.
2. Revision of various conceptualizations of the objective.
3. Overview of empirical results of “hard sciences” and linguistics in regard to cognition.
4. Critical revision of the idea of the objective given folk notions about the objective, certain conceptualizations, and empirical results.

But this task also requires us to be aware of the conceptual apparatus and the fundamental presuppositions of “hard sciences”. Thus, the next chapters are preceded by the examination of scientific method, issues such as objectivity, as well as the problem of conceptual schemes in science. Just as I have reviewed the theoretical roots of cognitive science in order to take the discoveries of the latter into consideration, I will do the same with the presuppositions of physics and other natural sciences.

2.1 Folk notions of the objective

Here I am going to do the same Lynch-inspired conceptual task I have already done in regard to the concept of subjective. I mean the listing of folk intuitions about the objective, which give limits to research on the problem of the objective. As a basis I will use the common-sense notions about the objective articulated by Robert Nozick in his book *Invariances*, which is focused on the investigation of the structure of the objective world. He claims that there are three strands to our ordinary notion of the objective: First, an objective fact is accessible from different angles. Access to it can be repeated by the same sense (sight, touch, etc.) at different times; it can be repeated by different senses of the same observer, and also by different observers. Different laboratories can replicate the phenomenon. What can be experienced only at one instant by one sense modality of one observer is indistinguishable from random noise and does not (securely) count as an objective fact.

The second mark of an objective truth, related to the first, is that there is or can be intersubjective agreement about it. And the third feature concerns independence. If *p* is an objective truth, then it holds independently of people’s beliefs, desires, hopes, and observations or measurements that *p*.⁵⁹

⁵⁹ Nozick, 2001, 75–76.

We can note here a rather curious mingle of folk notions and analytical perspective. The notions of objective Nozick brings forward, indeed, belong to folk intuitions. But following a Wittgensteinian strand, Nozick considers facts, not things, as ontologically basic. The idea that the world consists of facts and not things is definitely not a folk notion and is not easily comprehensible by common sense. An ordinary notion considers the world as objective. Common-sense notions of the objective lead to the rendering of an image of a realm of things that exist independently of our mind, are solid enough to be experienced, and are the same no matter who perceives them.

Thus, we encounter here a tension between a folk notion and an analytic notion of the objective. If we interpret folk notions the way Nozick does, we come to the conclusion that it is not things but instead facts that are objective. Hence, we should speak of the objective existence of facts or states of affairs. This leads to the convergence of the notions of objective truth and fact. Indeed, truth is often defined as having the same attributes distinguished by Nozick: intersubjective, mind-independent, verifiable. But as long as we follow folk intuitions instead of philosophic presupposition about the world consisting of facts, we have to distance ourselves from this way of treating the world.

If we choose to trace the outlines of folk notions before reviewing philosophical concepts, we must preserve the common-sense distance between the objective and truth. If we apply these properties to the world and things in it, we can clearly see this distance. The difference is quite distinct: for something to be true, there must be a possibility for this to be false as well. An apple or a pencil cannot be true or false, but a statement about an apple or a pencil can. We attribute truth not to the objects themselves, but to some special kinds of things that have the ability to bear truth – truthbearers. This kind of things may include *statements, beliefs, claims, assumptions, hypotheses, propositions, sentences, and utterances*.⁶⁰ Thus we can use the idea of truthbearers to distinguish between what is objective and what is true. It is not the objective that is true or false, but what we can think or say *about* what is objective and what is not as well.

So in order to distinguish the objective from truth and make Nozick's account more philosophically neutral I am going to revise the way Nozick puts the common-sense notions of objective. Where he speaks of facts or truths, I speak of things. Furthermore, what he lists as sense modalities I will put together in a stipulative way in the term "experience". Basically, the common truisms about the objective are the following:

1. Things independent of our mind are objective.
2. Things to which we can have experiential access are objective.

⁶⁰ Soames, 1999, 13.

3. Things that many people can experientially relate to and agree upon are objective.

So here we see three main intuitive features of the objective. We can infer from these statements that the objective has the following properties: it is (1) mind-independent, (2) empirically-accessed, and (3) intersubjective.⁶¹

1. The belief that there are things independent of our minds underlies both the folk notion of the objective and many philosophical endeavors to conceptualize reality. In folk belief, the idea of things independent of our mind converges with the idea of the world and things external to our mind. Mind-independence means that such things should remain the same despite changes in our subjective mood, mode of perception, beliefs and desires. Here philosophers can propose various candidates: material reality, laws and objects in it, if we follow a scientific realism, or facts constituting the world, if we follow the Wittgensteinian strand, as Nozick does. We can also propose a realm of ideas of a Platonic kind as a successful candidate for mind-independence. But, as I have argued above, we should distinguish folk ideas of real things existing independently (and externally) of our minds from mere ideas or facts of various philosophical accounts for this notion.
2. Experiential access is necessary to distinguish objective things from merely subjective illusions. Touching, for example, reveals that the surface is glossy, and not wet, as it seemed to our vision. Sensory experience, as our perception of the material world, is usually considered a reliable mode of perception, as we can (in principal) reproduce it, verify its accuracy with various instruments and techniques, or relate to its object by other senses.⁶² Sensory experience reveals something unchangeable despite various kinds and modes of sensory access to it. As Nozick writes, the “objective is an invariant under various transformations”⁶³; changes of the mode or angle of experience are a kind of transformation that the objective endures. But many believe that there is also a non-

⁶¹ Some philosophers, for example Donald Davidson, would deny that intersubjective is a property of objective. But here I consider a simple folk understanding of intersubjective as shared reality, opposed to subjective perspective.

⁶² Here one could argue that sensory experience is not reliable, because we rely on sensory data to certify other sensory data. Thus this might be a vicious circle. In order to respond to this critique I wish to point to the same circle in our reflective mode of cognition. We use reason to justify the ideas produced by reason. But I consider this circle as our human predicament. It is not vicious, as we can combine reasoning with sensory experience. We can use instruments and various modes of experience to certify that we are not experiencing an illusion. I will return to the issue of human predicament in chapter 3.

⁶³ Nozick, 2001, 76.

sensory kind of experience (numinous, religious, mystical).⁶⁴ In experience of this form, no sensory stimulation is present. Thus, no transformation of sensory access is possible here: we cannot apply our senses such as vision and smell to perceive God. This makes this kind of experience problematic for considering it as a reliable mode of cognition. It is not clear whether these kinds of experience are correct reports of what is really going on.⁶⁵

3. The idea of intersubjectivity is auxiliary to other folk notions of the objective. We usually believe that if something is objective, others may experience it as well. Here is how an issue of the folk notion of intersubjectivity can be put in brief:

A central assumption behind this common pattern of thought, however, is that there are indeed many other perceiving subjects besides ourselves and we are all capable, sometimes at least, of knowing objective reality. Another assumption is that objective reality is logically consistent. Assuming that reality is consistent, it follows that your and my logically incompatible judgments about a thing cannot both be true; intersubjective disagreement indicates error for at least one of us.⁶⁶

Thus, it is usually held that an intersubjective disagreement indicates that something is not objective. But intersubjective agreement upon something is not enough for a thing to count as objective. It is clear from historical cases such as Galileo's trial, that intersubjective agreement can nevertheless lead to falsity, while a single individual's opinion can be true. The other problematic issue of intersubjectivity is the inclusion of not only material objects, but also lots of social concepts and ideas. Social realities, such as law, money, and state, are no doubt intersubjective. But can we count them as objective? To consider money as money and not merely paper depends on human beliefs. Thus, the idea of intersubjectivity as a property of the objective raises the question of the inclusion of social reality in the notion of the objective. But still, intersubjectivity is an important folk notion of the objective.

These are quite common intuitions about the objective. They complement each other, buttressing the separation from the subjective. They are also used as criteria of the objective. Sometimes our senses and experience can deceive us – like in states of hallucination, dreaming, and so on. Agreement between me and other people on the things I perceive in these states is unlikely. If it seemed to me in a state of fever that the temperature in the room had

⁶⁴ Zackariasson, 2002, 17. This is one of the key features of religious experience, distinguishing it from other kinds: something external, not available to ordinary senses, and not reducible to sensory stimulation, is claimed to be perceived in this kind of experience.

⁶⁵ A discussion about reliability of non-sensory experiences is presented in Zackariasson, 2002, ch. 5.

⁶⁶ Internet Encyclopedia of Philosophy, <http://www.iep.utm.edu/objectiv/>

dropped, I could be reassured by people around me that this was my subjective illusion; objectively the temperature is the same. Here (3) is applied to complement (2). In other situations, where (3) fails to produce objectivity, (2) is applied additionally. Experience must provide objectivity in cases of mass delusion. Experience – or experiment – proves the objectivity of various things we encounter. For religious people non-sensory kinds of (2) are also a proof of the objectivity of God's existence despite lack of (3). And (1) makes sure that no changes of mind are involved in defining the objective. Only that which does not depend upon the human mind for its existence is objective. However, I am not going to use folk notions as criteria of the objective. I will hold them only as limits, identifying that we are still speaking about the thing under question.

In the following I am going to investigate how these folk attributes of the objective are accounted for in philosophical traditions focusing upon the objective. For now, we can summarize that folk notions of the objective depict it as one objective realm, which is accessible to the subject from various angles in experience, and which can be shared by many subjects.

2.2 Conceptualizations of the objective

Just as we have observed various conceptions of the subjective in the previous chapter, let us do the same with those of the objective. Speaking of the conceptual issues of the objective we have to clarify several points. *Firstly: What is considered to be objective? What kind of objects and properties fall under this term? How do these concepts account for the folk-notional aspects of the objective? How do they divide subjective and objective?* The issue of the objective was already half-opened when I made an overview of the folk notions of the objective and various approaches to the cognitive situation: we have seen that we need to account for folk notions of the objective such as mind-independence, intersubjectivity and experiential access. Now let us proceed to philosophical conceptualizations of the objective.

The choice of philosophic conceptualizations of the objective is justified by the same rationale I have used in the previous chapter. Just as there are philosophers who are especially interested in the investigations of the subject in its relation to the world (phenomenologists and philosophers of mind), there are also those focusing primarily upon the objective. There are several distinguished approaches to the objective in contemporary philosophy. A diligent researcher could find more and include a lot of variations of approaches within these traditions, but this is not necessary for the aims of my research. Here I need only representative examples of distinguished concepts of the objective. So I have chosen the philosophers belonging to the following three traditions: scientific realism, social constructivism and some trends in analytic philosophy. They reveal the philosophical underpinnings of some

of the methods and approaches in natural sciences, sociology and philosophy of language, the results of which are to be used in the chapter devoted to the empirical issues of the subject-object relation in cognition.

As it is social sciences, natural sciences and among them especially the brain sciences that gather empirical data and make observations of human cognition, we need to use philosophical reflection upon these traditions in order to uncover their roots and the presuppositions underlying their theories.

My aim here is to grasp the main and distinctive ideas regarding the objective and cognition, which means that I will have to omit the precise scrutiny of the possible flaws in these ideas. In order to focus upon the main problem of objectivity, I will make only a brief and rather crude sketch of the ideas of selected philosophers, neglecting, for example, the particularities of realism and anti-realism, and varieties of these. These issues are very important, but are out of the scope of this research. Thus, I have chosen these distinguished positions to sketch and compare various approaches to the objective in a contrasting and clear picture.

Scientific realism, social constructivism and analytic philosophy present distinct ideas about the objective. Scientific realism focuses upon the *natural world as objective*. In modern times science has been considered the most reliable means of reaching objective and true knowledge. Scientific realism claims that it is the existence of the objects described by science that makes the success of science possible.⁶⁷ Here I am going to linger upon scientific realism, which is a tacit or sometimes explicit basis of scientific endeavor and a rather common stand for scientists. It represents the approach of science to objectivity in a most salient way. Moreover, scientific realism opposes social constructionism, whose approach to the objective will be investigated later. I will consider how scientific realists (Leplin, Rescher, Kukla) conceptualize the objective.

Social constructivism has challenged claims by the natural sciences for objectivity and truth and introduced its own concepts of the objective and knowledge.⁶⁸ Berger and Luckmann, whose ideas I am going to consider, focus upon the construction of *social as objective*.⁶⁹ Latour proceeds even

⁶⁷ Smart, 1969, 150.

⁶⁸ Here postmodern philosophy may also be mentioned as another tradition that challenged claims for objectivity. Derrida shifts the focus of attention to text and narratives, showing how text establishes its own truth and how this truth can be deconstructed. He claims that there is nothing outside of the text. (Derrida, 1976, 158) All the truths and meanings are internal to the text. Moreover, postmodernism strives to show that “epistemic distinctions are linguistically biased and arbitrary and do not reflect real, ontologically derived opposition”. (Ward, 1994, 134) Thus, the distinctions between belief and knowledge, appearance and reality, science and mythology, and objective and subjective are arbitrary as well. But as postmodernism has not formulated its own positive criteria and conceptions of objectivity, contenting itself with a critique and deconstruction only, I will not consider it here.

⁶⁹ They do not deny the objectivity of what natural sciences reveal.

further and considers scientific objectivity as constructed as well.⁷⁰ Social constructivists have articulated theories aimed at revealing philosophical and epistemological grounds of both natural science and social science. I will tackle the Actor-Network Theory, proposed by Latour and Woolgar, as it develops the social constructivists' ideas and provides a distinct and fruitful system, dissolving some dualisms.

Analytic philosophy focuses upon *language as revealing the objective*. Early Wittgenstein considers language as a picture revealing objective states of affairs. I will consider some of the most important of Wittgenstein's ideas about language and its relation to reality. This consideration will be supplemented by the reception of Wittgenstein's ideas in feminist philosophy (Tanesini)⁷¹ and logical positivism, exemplified by Stenius.⁷²

So I am first going to make a short sketch of the objective as it is conceptualized in philosophy of science, which investigates the objective primarily in its mind-independent and experientially accessible aspects. Then I will move to the object in the sociological tradition, which makes an emphasis on intersubjectivity in the objective. Finally I will make an overview of Wittgensteinian philosophy, which focuses on language, claiming that the objective world is depicted in it. I will also provide a critique of these accounts, but the reason for doing this is quite modest. I am not going to disprove or undermine these approaches. Instead, I point at some problems with them in order to show the limitations of these approaches. These limitations are to be taken into account in the following critique of dualism and a revision of the conceptualizations.

At the end of the chapter I will provide an overview and comparison of the accounts of the objective against folk notions. I partly base my considerations upon the instances of philosophical self-reflections of natural science and social science. The other part will consist of my own summary of the cognitive situation as it is depicted tacitly or explicitly in natural science and social science.

2.3 Objectivity in scientific realism

Science is often considered the main and most successful endeavor for knowledge of the objective. What has made science so successful and why is it considered so? Ward attempts to uncover an epistemological system widely accepted both in society and the scientific community. It is this system of ideas that made scientific realism and acceptance of it in modern society possible. This system, underlying scientific undertaking, emphasizes mind-

⁷⁰ Latour, 1993, 6.

⁷¹ Tanesini, 2004.

⁷² Stenius, 1960.

independent properties of the objective world which science investigates, and has several main features:

No boundary convention is more important to the modern way of knowing than the one between belief and truth. The modern episteme sets up firm distinctions between legitimate and illegitimate types of knowledge claims, including a categorization of the claims that constitute knowledge and the types of people who can make those claims. Legitimate knowledge claims are seen as those that adhere to a certain cognitive style, use the scientific method, and are open to critical evaluation and reformulation. Illegitimate knowledge claims are seen as those that are derived from undisciplined lay accounts of phenomena and haphazard techniques and are simply accepted at face value.⁷³

Thus, the modern epistemological system requires:

- The strict distinction between belief and truth.
- Truth and objectivity to be secured by the usage of scientific method.
- A certain (scientific) cognitive style.
- Institutional structures legitimizing the claims for truth.
- Openness for criticism.

This epistemological system has flourished in modernity and prepared the climax of scientific realism. We can see the elements of this system in various explications of the latter. In fact, scientific realism has a number of different versions and manifestations. But it is possible to formulate common features of any kind of scientific realism:

Scientific realists hold that the characteristic product of successful scientific research is knowledge of largely theory-independent phenomena and that such knowledge is possible (indeed actual) even in those cases in which the relevant phenomena are not, in any non-question-begging sense, observable.⁷⁴

So this tradition is based on a belief that science is capable of providing accurate representations of objective reality. Moreover, as Jarrett Leplin claims, “science makes possible knowledge of the world beyond its accessible, empirical manifestations.”⁷⁵ Science goes even deeper into the objective than our sensual capacities allow. This can be considered a first major claim.

Scientific representations are, another scientific realist – Nicholas Rescher – claims, “factually true generalizations about the actual behavior of real physical objects existing in nature”.⁷⁶ Scientific realism argues further that

⁷³ Ward, 1994, 3.

⁷⁴ Stanford Encyclopedia of Philosophy <http://plato.stanford.edu/entries/scientific-realism/>

⁷⁵ Leplin, 1984, 2.

⁷⁶ Rescher, 1987, 4.

objects exist independently of human cognition and that concepts and theoretical generalizations, if properly formulated, correspond to the real existence of those objects.

Scientific realism draws a firm philosophical distinction between the world as it is perceived and the world as it actually is. Truth is defined as those statements that successfully cross the ontological boundary between subject and object and successfully capture the inherent nature of that independent reality.⁷⁷

Thus, it is a reality existing independently of us that makes scientific propositions true or false. But the mechanism and nature of this “truth making” is not clear. The approach can be criticized for the introduction of some unknown force that connects reality to scientific statements, thus making them true. Nevertheless, scientific realism explains the first folk notion of the objective through stipulation of the existence of objects, independent of human mind, which can be grasped by scientific theories. These theories are held to capture the very nature of the objective.

Of course, such bold claims could be criticized, and this will be done in detail later. For now we can state that this approach is dualistic, with a clear distinction between the cognizing subject and the object being cognized. Moreover, it believes in capturing the objective as it actually is. The scientific approach renders the objective as a reality outside of the human mind. It is best applicable to easily accessible physical objects, such as apples or stones, which have some objective properties, such as size and color. Science strives to grasp and explain these observable objective properties. But when it comes to the things unobservable, such as forces, micro-particles, etc., then scientific realism turns out to be a very problematic and challenged philosophical stance. We will consider these difficulties of scientific realism a bit later.

Now let us proceed with an investigation of those modes of accessing the objective that science considers legitimate. The distinguishing characteristic of the scientific mode of accessing the world is the usage of scientific method. Scientific method is a means of achieving both the first and second folk notions of the objective: mind-independence and experiential access. This idea is related not only to scientific realism, but even to science in general. Recent investigation of the textbooks of various sciences shows that the notion and general constituents of the scientific method can be found across scientific fields from physics to psychology.⁷⁸ Scientific method consists of several stages, which could be briefly listed this way:

- Hypothesis formulation

⁷⁷ Ward, 1994, 13.

⁷⁸ Blachowicz, 2009, 308–310.

- Hypothesis testing
- Deductive and inductive logic
- Controlled experiments; replication and repeatability
- Interactions between data and theory
- Limits to science's domain.⁷⁹

The correct application of this method and the correct conduct of experiments it requires are believed to secure knowledge. As Steven Ward shows in his reconstruction of the scientific episteme, in science truth is believed to be obtainable to those who practice an appropriate “epistemological decorum”. Objectivity requires an appropriate style of conduct, where the experiment is more than just a method of discovery; it is considered an ordeal, a test of its subject's true nature. Thus, it is the experiments and not the subjective senses that yield knowledge of the objective. The design of experiments aims at elimination of everything subjective from the act of cognition. As Bacon puts it, “To the immediate and proper perception of the sense therefore I do not give much weight, but I contrive that the office of the sense shall be only to judge of the experiment, and that the experiment itself shall judge of the thing”.⁸⁰ Thus, even perception is to be purified of subjectivity. Objective cognition should be performed with the usage of objective instruments.

The special equipment of this extraordinary knowledge was the instruments of the laboratory. As with practicing a rigorous methodology, scientific instruments were also seen as means for correcting and disciplining the senses... The senses were often capable of being misled by visual distortions or other sensory apparitions. By using specialized equipment, the senses were capable of being better organized and regimented in order to examine and record natural events accurately.⁸¹

Thus, science is striving for objectivity of the highest order, free from any contamination of subjectivity. Even the human senses are not trusted and should be refined to conform to the demands of scientific objectivity and method. Hence, access to the objective turns out to be guarded by scientific method. It is the strictness of the rules of the experimental conduct, the instruments and the laboratories that secures access to the objective and lets no lay knowledge contaminate real knowledge.

We can also see that a big part of scientific method depends upon the theories and hypotheses that science constructs on the basis of observations. It is the theory that defines the direction of the investigations of science. This

⁷⁹ Gauch, 2003, 11.

⁸⁰ Bacon, [1620] 1960, 22.

⁸¹ Ward, 1994, 7.

feature of science is also named theory-ladenness and will be further considered at length.

We have seen how scientific realism accounts for mind-independence and experiential access. Now let us turn to the most problematic criterion: intersubjectivity. In fact, as science is striving to eliminate any subjective influence, intersubjective agreement is not necessarily required for something to be considered objective. Scientific facts and objects, according to the realist, exist independently of any subject or subjects. Thus, it does not matter whether others agree upon a scientific statement. If it corresponds to real objects and facts, it does so in virtue of the objective being structured this way. But we can see a demand for intersubjective accessibility in the criterion of repeatability of scientific results. Scientific fact should be repeatably accessible by other humans in order to count as objective.

Unfortunately, science has developed beyond the limits of making statements only about the observable and started to make claims and theories which cannot have decisive empirical verification. Consequently, scientific realism has encountered lots of problems, such as underdetermination of theories by facts, stated by the Duhem-Quine thesis. Here is how Kukla puts this problem:

- (1) all theories have indefinitely many empirically equivalent rivals; (2) the only warrant for believing one theory over another is its possession of a greater measure of empirical virtue; therefore (3) belief in any theory must be arbitrary and unfounded.⁸²

Thus, while nature itself keeps silent, intersubjective agreement may raise its voice. According to the scientific realist's point of view, this agreement does not have the power to decide what is true and what is false. But still it helps to come closer to truth, as was stated in the review of folk notions of intersubjectivity's role in truth. I will touch upon this and other problems related to the theory-ladenness of experiments later.

For now let us take a look at the overall picture of the objective that can be devised on the basis of scientific realism, and reconstruction of the suppositions of scientific method and the scientific episteme made by Ward. So, according to this tradition, the objective is mind-independent in virtue of actually existing real facts and objects that science describes. Moreover, scientific realism claims that science is capable of reaching beyond the experientially accessible.

⁸² Kukla, 1996, 137.

2.3.1 Critique of scientific realism

But scientific realism's claim of objectivity can be criticized for its underestimation of the influence of the *cognizing subject* upon the object being cognized. The act of cognition inevitably includes some action of the subject upon the object. In order to cognize something, we have to distinguish, to measure, to put under examination, etc. Do these and similar acts of cognition really leave the objective undisturbed and unaffected? And does the subject in cognition play the role of Cartesian-indifferent *res cogitans*, simply registering and mirroring the objective? We cannot know anything without the help and mediation of our subjectivity. How can we know anything that is independent of us? Introduction of the mediators of the objective, such as instruments, measurements, etc., into the cognitive situation does not help to alleviate the indispensability of subjectivity. The subject is the final perceiving and processing unit for any cognitive act. So here comes the first problem: *To what extent is the act of knowing independent of subjectivity?*

Furthermore, science itself discovered the influence of the subject upon the objective. Quantum physics has shown that in the act of cognition we not only perceive the things as they are, but we actually *interact* with the objects. In this act we may influence the objects so that they change under the very act of cognition. In quantum physics the observation itself inevitably changes the way things are. The Heisenberg uncertainty principle states that certain pairs of physical properties, like position and momentum, cannot both be known with equally high accuracy. This happens for a quite simple reason: if we measure the velocity of a particle, we change its position. And if we measure the position of a particle, we inevitably change its momentum. No matter what property we measure, the other property will remain uncertain.

Moreover, changing the method of observation we also change the behavior of quantum objects. For example, a photon can behave as a particle in one set of experiments, but as a wave in a different set of experiments. This fact has lead Heisenberg to formulate the aforementioned uncertainty principle. This principle not only reveals the limits of our cognition, but also puts an emphasis on a privileged role for the observer. This erasure of the traditional distinction between the experiential subject and the experienced object threatened the scientific worldview with its quest for pure objectivity. In fact, some statements of quantum mechanics, which stipulated the influence of the observation upon the particles, seemed so radical for the traditional scientific worldview, that many renowned scientists refused to accept it. As Niels Bohr said: "It is certainly not possible for the observer to influence the events which may appear under the conditions he has arranged".⁸³

⁸³ Bohr, [1958] 1987, 51.

The influence of the observer appears not only in the world of quantum entities, but in the world of micro and macro objects as well. For example, the studies of caves change the caves. As the scientists inevitably bring with them to caves microbes and fungi that, inhabit the human organism and soil from outside of caves, this occasionally supports the growth of contaminating microbes, and even alters the underlying surface of the caves.⁸⁴ The world around us continually changes under the influence of human actions and attempts to cognize it. Thus, we can see that even in scientific accounts that claim strict objectivity, subjective and objective intermingle in the act of perception and cognition. The process of cognition itself requires this mingling and the results of scientific investigation are therefore dependent on the actions deliberately chosen by humans. Thus, the subject is in a more complicated relationship with the object than a mere reflection or unengaged cognition. Scientific realists' conceptualization of the cognitive situation does not provide an explanation for such a relation.

Just as there are problems with the subjective in scientific realism, there also are certain problems with the identification of objective knowledge and the results of experiments. The first problem concerns the actions and the scope of experiments, the second problem considers the introduction of unobservable and inaccessible entities to scientific descriptions of the objective. Let us proceed with the first problem. Our experiments are based upon our concepts and imagination. This is one of the reasons that experiments rarely produce absolutely new data, on which new theory can be based. For example, when Galileo made his famous experiments with falling objects, he already had a kind of vision of possible outcomes in his mind. Thus, the experiments in fact are very peculiar actions with certain expectations of their results. This is because experimenting scientists select some isolated aspect of reality, such as a falling stone, act upon it, and perceive the results in accord to certain expectations.

But here we can find at least two problems. First, what we get through experiments depends heavily upon the actions we take and their exact details. If we use dogs for experimenting, our knowledge of these animals will be different than if we keep dogs as pets. We can learn a lot about the physiology of the dogs kept in cages and isolated from interaction with humans. But we cannot know how dogs react to the emotions of their masters, how they enter a human family and relate to other members of it. Our perception and our experience of these animals depend upon our actions upon them. The reactions of the dogs, people and even the material substances depend on what we do to them.

But scientific method, as understood by realists, cuts off a huge amount of possible actions, considering them as non-scientific and not revealing the objective. For instance, all the actions that cannot be re-iterated do not fit

⁸⁴ Lavoie, Northup, 2005, 40.

this method. If the result of an action depends upon the subject, it does not conform to the demands of scientific objectivity. But scientific method is not the only way to know the world. Everyday, religious, artistic, mystical and many other means of cognition comprehend valuable aspects of the human-inhabited world as well. Thus, although science gives us a picture of the world, this picture is not complete. Scientific experiment, as a codified action with many restrictions, applied to a limited part of the world, may only show how a certain part of the world responds to such and such actions. Hence, what science actually reveals is not the objective world, but only what opens to us as a result of some possible ways of addressing some parts (or aspects) of reality that yield a predictable response.

But proponents of scientific realism may answer this critique as follows: that it is not the experiments themselves, but the theories standing behind them, and summarizing the data in an encompassing formula, that give us knowledge of reality as it is. Here we approach the second and third problems, which concern the experiential access of science: the extent to which theories meet the data and statements of the unobservable in theories. Let us start by considering these problems this way: in order to know how some part of the world is responding, we have to look in the right direction and pay attention to the right things. Basically speaking, we have to know what to look for. But the directions of scientific investigation, just as the design of experiments and the observations themselves, are based on scientific theories, as Thomas Kuhn has shown.⁸⁵ So scientific theories include not only empirically discernable objects. These theories and, consequently, the experiments based upon them, rest on something unobservable. Thus, science describes not only the observable object, but also unobservable and experientially inaccessible entities, such as entropy, micro-particles, etc. And it is these unobservable entities that ground the scientific descriptions and explanations of the observable phenomena. These unobservable entities and theories including them direct and shape scientific investigation of the objective.

This problem of science is discussed widely by philosophers of science and has no evident solution that allows keeping the scientific claim for an empirical basis and description of only observable phenomena. There are also attempts to save the achievements reached by the major scientific theories and to keep the notion of the observable at the same time. As there is no certainty among philosophers of science of what to call observable and how to define observation, there can be various definitions of it. For example, van Fraassen proposes to limit the observable to the capacities of the human body.⁸⁶ Hence, in this approach, observation is both limited and shaped by human cognitive capacities. As a result, human subjectivity again comes to the fore in attempts to reach objectivity.

⁸⁵ Kuhn, 1970.

⁸⁶ Van Fraassen, 1980, 17.

As we have seen, science relates to the objective primarily through special actions (experiments) and theories summarizing and explaining the results of the actions. These actions and theories, conveyed and constructed in a codified manner, together comprise the scientific method of the investigation of the objective. As was shown, there are certain problems with the way realism connects scientific actions to the objective. We have dwelled upon the problems of the actions of science: the experiential access and the mind-independence of the realities revealed in experiments. It turned out that the objective discovered in experiments is affected by the subjective. Moreover, the way the experiments are conducted and interpreted is based on theories. It is scientific theories that constitute and discriminate objects of scientific investigation, both observable and not observable. But are these observable and unobservable entities introduced by science, real and objective? Do scientific theories exhaust the objective in its totality? Thomas Kuhn has shown that scientific theories can replace each other in paradigm shifts. Moreover, scientific paradigms are incommensurable, which means that they are incompatible, as the criteria for comparing are paradigm dependent.⁸⁷ Paradigms depict the world in different ways, discriminating incompatible objects and the relations between them. So, in the following investigation devoted to conceptual schemes, we will proceed to this problem that arises from descriptions and theories of science: namely, the problem of conceptual schemes and their incommensurability.

The first problem with the scientific account of the objective is the influence of the subjective upon the objective. If science is dependent on certain actions upon certain parts of reality, is it really capable of grasping reality as it is, for any given action upon any given part or constellation of parts of reality? The problem of the influence of the subjective upon the objective has ramifications for the problem of the intersubjective and the structure of the objective as well. Do the objects distinguished and dealt with by science really exist, in accord with the criteria of scientific realism, or are they merely social constructs, just as law and money are? To answer these questions I will provide an overview of the problem of objects and conceptual schemes. But first I will consider a sociological stance in regard to the objective and also apply a sociological critique of scientific realism.

⁸⁷ There is a noteworthy critique of incommensurability of conceptual schemes by Donald Davidson (Davidson, 1984, 5–20). But this critique considers conceptual schemes as languages, while I am going to highlight the experiential grounds of conceptual schemes. Thus, I am keeping the claim of incommensurability as it is. The critique of it will be provided later.

2.4 Social constructionism and the objective

Sociology proposes a different picture of the objective, and its cognition, than scientific realism does. Ward sees sociology as a counterpart to scientific realism in the quest for truth and objectivity. This approach may sometimes lead to “the infinite deconstructionism, textualism, and reflexive constructionism of postmodernism”⁸⁸, yet it has important insights into some aspects of the objective. Sociology emphasizes the intersubjective dimension; some branches of sociology claim that society is the source of all truths and all that one might consider to be objective. Just as I have chosen the radical worldview of scientific realism to describe the main strands of science, I am going to contrast it with the radically different worldview of social constructionism. There are other approaches in sociology, but this one reveals the presuppositions and the main strand of contemporary sociology in a strongly contrasting way.

Sociologists emphasize that the objective, knowledge, and all criteria of truth are constructed by society. Social constructionists like Peter L. Berger and Thomas Luckmann argue that all that is called knowledge, and all that we can say about the objective (with an exception being the natural world, which they do not consider as constructed), are in fact derived from and maintained by social interactions. The process of construction of the objective starts with the habitualization of frequent actions:

Any action that is repeated frequently becomes cast into a pattern, which can then be reproduced with an economy of effort and which, ipso facto, is apprehended by its performer as that pattern. Habitualization further implies that the action in question may be performed again in the future in the same manner and with the same economical effort... Institutionalization occurs whenever there is a reciprocal typification of habitualized actions by types of actors. Put differently, any such typification is an institution... It is theoretically important, however, to emphasize that the institutionalizing process of reciprocal typification would occur even if two individuals began to interact *de novo*... A and B alone are responsible for having constructed this world... Only at this point does it become possible to speak of a social world at all, in the sense of a comprehensive and given reality confronting the individual in a manner analogous to the reality of the natural world. Only in this way, as an objective world, can the social formations be transmitted to a new generation...⁸⁹

As a result of these processes of habitualization and institutionalization, the world of the social emerges. Here humans encounter a social world as an objective world. This world has a certain structure and rules, just like a physical (or “natural”, in Berger and Luckmann’s terminology) world. Yet this

⁸⁸ Ward, 1994, 140.

⁸⁹ Berger, Luckmann, 1966, 59–60.

socially constructed world does not change its ontological status, remaining of a constructed character:

It is important to keep in mind that the objectivity of the institutional world, however massive it may appear to the individual, is a humanly produced, constructed objectivity. The process by which the externalized products of human activity attain the character of objectivity is objectivation. The institutional world is objectivated human activity, and so is every single institution. In other words despite the objectivity that marks the social world in human experience, it does not thereby acquire an ontological status apart from the human activity that produced it.⁹⁰

Thus, sociology describes the objectivity of the world humans live in as a humanly constructed objectivity. The sociological accounts explain perfectly well the third folk criterion of the objective: intersubjectivity. Indeed, here intersubjective is equal to objective. And we can find explanations for the first criterion as well: social institutions form the mind-independence of the objective which folk notions demand; a single individual's desires, beliefs and other mind states cannot directly affect these institutions and other social structures which constitute social objectivity. It is the shared beliefs and actions of groups that establish the social objectivity.

Thus we see how social constructionism accounts for folk criteria (1) and (3) of the objective. Criterion (2) – an experiential access to the objective – is satisfied through the introduction of the idea of the social and individual action. We do not merely believe that the social institutions exist, we experience their existence in various sensual forms in actions and interactions. For example, if we violate traffic laws, a policeman stops and fines us, perhaps we end up in jail. Being in jail, it would be hard to deny the objectivity of social institutions, as we experience it with all our senses and this does not change with transformation of sensual modalities. Thus we can address social reality in action and experience its objectivity.

As already seen in Berger and Luckmann's description of habitualization of action leading to institutionalization, action plays a crucial role in construction and maintenance of the objective. But here we encounter a difficulty related to the question: What does a relation between an individual human and a society amount to? Anthony Giddens proposes a theory of structuration in order to describe the exact mechanism of individual actions forming the society, and societal structures directing and enabling individual actions. He claims that human social activities are recursive. "In and through their activities agents reproduce the conditions that make these activities possible."⁹¹ Wolfgang Hofkirchner summarizes Giddens' approach this way:

⁹⁰ Berger, Luckmann, 1966, 61.

⁹¹ Giddens, 1984, 2.

Societal structures emerge from individual actions and individual actions are shaped by societal structures. There are two levels. At the micro-level the elements of the system, namely actors, are located. They carry out actions, and by the interplay of the fluctuating individual actions, they design fairly stable relations among them which gain a relative independence from the interactions. Structures like that emerge thus on a macro-level, where they exist in their own right insofar as they, in turn, influence the actors. On the one hand, they constrain the individual agency by setting conditions that limit the scope of possibilities to act and, on the other, just by doing so provide it with the potential for realizing options it would not otherwise have.⁹²

Thus we can trace a similar emphasis upon the actions that was already mentioned above in the discussion of philosophy of science. It is actions that determine the responses of reality and the discrimination of the world into parts.

I agree with social constructionists on the point that the subjective and society influence our knowledge and our perception of the objective. But I cannot accept the extent to which some social constructionists take this point. According to social constructionists, science, like any other social institution, is first of all a human activity with strict rules. Some sociologists, like Berger and Luckmann, believe that there are brute facts investigated by science, which are unchangeable by any social conventions. This version of sociology is called weak social constructionism. But others claim that even the objects investigated by science are socially constructed. Andrew Pickering, for example, gives a provocative title, “Constructing quarks”, to his sociological history of particle physics. He argues that the reason for accepting the reality of quarks in science relates to the dynamics of practice of the scientific community: “the dynamics which is at once social and conceptual”.⁹³ In this sense strong social constructionism opposes scientific realism, claiming that we do not merely discover the scientific objects, but construct them in accordance with our subjectivity.

I consider the position of weak social constructionism more grounded. Society is not the only source of our knowledge. We still have our perception and our senses. Society may shape and give meaning to the information received by our faculties, but it is not the whole story. There is something to which we have access through our senses and which gives resistance to our attempts to manipulate it. Science may have a social nature, but the actions it performs aim at the physical reality we encounter, and reveal the varieties of resistance this reality gives to our actions. This is how Erica Appelros puts the difference between physical and social reality:

The difference between for instance a mountain (which is conceptualized with strong dependence on physical characteristics) and money (which is

⁹² Hofkirchner, 2007, 475–476.

⁹³ Pickering, 1984, x.

conceptualized with a somewhat less strong dependence on physical characteristics) is that in the case of a mountain the physical characteristics of the mountain forms the key factor in constituting the reality of the mountain, leading us to consider it as something real. We cannot change the physical reality of the mountain by changing our conceptualization of it. Rather it is our *views* of the physical reality that we restructure by changing our conceptualizations of it.⁹⁴

Besides, I am going to use science not as an instance of socially constructed knowledge, but as an example of a different perspective, showing us both limitations and structures of our cognition and also pointing to that which is beyond our cognitive capacities. So I believe that strong social constructionism has a correct intuition, but it mistakenly applies the latter in a universal manner, leaving no place for anything except social constructs. That is why I will apply the same intuition with certain reservations: *society influences how we conceive the objective*. To what extent and how exactly the former influences the latter will be investigated in the following.

We can now summarize how social constructivism accounts for the objective. In the sociological account, the core of the objective is intersubjectivity (3). The first folk criterion of the objective – mind-independence – is provided by the means of intersubjectivity: social interactions create a realm of intersubjectivity. Shared concepts, ideas and norms of behavior do not depend on a singular subject. Experiential access is also granted by society and intersubjective relations: children are raised within a society which already has all the concepts to be learned and used for any kind of experience. Human social activities are continually recreated by social actors via the very means whereby they express themselves *as* actors, as Giddens shows.⁹⁵ Strong social constructivism claims that there is nothing beyond the social, while weak social constructivism claims that the world of nature is independent of society and its conventions and should be studied by means of science.

2.4.1 Critiques of the sociological approach

Just as there are sociologists' critique of the scientific approach to the objective, there are also critiques of sociologists' own approaches and presuppositions. One line of critique is driven by postmodernists' deconstructive endeavor and reflective thinking. Reflexivity demands all claims for knowledge to reflex upon the grounds of making such claims. And it turns out that application of social constructivists claims to their own endeavor makes the whole sociological enterprise problematic. "If knowledge is socially constructed, then must not the sociological knowledge that all knowledge is

⁹⁴ Appelros, 2002, 25.

⁹⁵ Giddens, 1984, 2.

constructed also be a social construction?”⁹⁶ In this case the sociological claims for knowledge and objectivity “are merely another tier of explanation appended to the layer of everyday experience: are they really necessary?”⁹⁷ Thus, social constructivism cannot account for the objectivity of its own knowledge claims.⁹⁸ So social constructivism, maintaining the objectivity of the social, at the same time *leads to relativism* in regard to knowledge and truth claims. This relativism of “anything goes” is strongly opposed by realists.

Another critique of sociology comes from the proponents of the Actor Network Theory (ANT). This theory replaces the sociological notion of an actor as a conscious being, with the idea that anything can be an actor – anything endowed with the ability to be a part of a network, including people and material objects: statements, technical artifacts, humans, entities being studied, concepts, organizations, professions, skills, money, etc. In turn, the network is considered as a functioning construct, where anything capable of contributing to its functioning can be involved. Michel Callon points to the fact that sociology utilizes “pre-established social categories and rigid social/natural divide” that forces sociologists to look at the order of things rather than at how things are ordered.⁹⁹ Hence the critique by proponents of ANT is directed towards the rigid categories sociologists use and the lack of attention to the dynamics of reality:

These categories and divides have led sociologists to search for a foundational social reality rather than the network of the real. Sociologists have accepted the demarcation between humans and nonhumans, society and nature, and knowledge and ideology rather than looking at how networks do the sorting and purifying. They have looked at society as already always there rather than at the simultaneous construction of natures and societies in the process of the mobilization of actants.¹⁰⁰

This critique is based on the presuppositions of ANT, which state that there is no difference between natural and social sciences.¹⁰¹ Thus, the knowledge produced by the former could not be explained on the basis of the knowledge produced by the latter. Instead, in order to know the state of affairs we have to consider the networks and the actors, comprising them. This theory changes the traditional notion of action and eliminates the divide between natural and social.

⁹⁶ Ward, 1994, 91.

⁹⁷ Ward, 1994, 89.

⁹⁸ Ward, 1994, 90.

⁹⁹ Callon, 1987, 100.

¹⁰⁰ Ward, 1994, 140.

¹⁰¹ Latour, 1987, 256.

Although ANT has been declared dead by its own founders Bruno Latour and Michel Callon¹⁰², it has some important insights that could be used in further investigation of the cognitive situation. The inclusion of physical entities in the domain of action is consonant with the contemporary tendency in philosophy of mind to include instruments, environment and the overall situation in the consideration of cognition.¹⁰³ I think that the erasure of the border between the social and the physical (natural) is important for our consideration. I do not mean that we have to consider social and physical as identical and indistinguishable. There are differences between them. But there is no border disallowing their interaction and integration in actions. A sociological objective is constituted by actions, taken by subjects on physical objects as well (cultural artifacts, buildings etc.). If it is not only subjects that participate in actions, the sociological objective includes the physical world. Thus, this theory brings the social and physical together, which is an important step out of dualism.

Thus from the approach of social constructionism it is clear that we have to pay attention to the actions and interactions of the subjects. It is these actions that allow us to encounter and share the objective. Moreover, following ANT, we have to pay attention to all kinds of objects involved in the functioning of a network. It is this network of social and physical actors that produces knowledge.

We have already met actions as a means of accessing the objective in science, where actions are codified as experiments and only some part of the totality of possible actions is deemed to reveal the objective. Sociology, to the contrary, embraces all possible kinds of human action: everyday, religious, scientific, etc. From the social constructivist's point of view, any social habitualized action leads to the emergence of the objective. In any case, action is an indispensable means of access to the objective. In the next chapter I will consider what kinds of action can be deemed to reveal the objective, and how action connects to theories and conceptual schemes.

2.5 Language depicting the objective world

In chapter 1, I stated that although a language can be considered as a subjective capability inherent in humanity, it would be considered later as a part of the objective. In fact, the consideration of language is of great importance for almost any research on the problem of truth and the objective. Truth is expressed in language; knowledge is transmitted via language. These truisms were obvious for many generations of philosophers, but language was not

¹⁰² Latour, 1997.

¹⁰³ Gallagher, 2008, 163–178.

investigated with due respect and for a long time was taken to have only an auxiliary function. It was in the beginning of the twentieth century that the appreciation of language changed radically.

Additional to the attempts of phenomenology and hermeneutics to change the account of the human-world relation, there developed some new ideas drastically altering the approach to truth and language. The later Wittgenstein, claiming that philosophical problems arise from a misunderstanding of the logic of language,¹⁰⁴ shifted the attention of philosophers, from things people speak about, to language itself and how it is used by people. The search for truth turned to the logical analysis of linguistic structures. Moreover, the linguistic turn has transfigured the traditional subject-object cognitive situation, introducing language as a main focus of study. Following this revolutionary turn in philosophy we must take language into account in the investigation of truth. Language has even started to be seen as the only place where truth nests and can be sought.

Since then, language has been studied extensively by philosophy. But philosophers have taken different stands in regard to language and its role in cognition. We may consider the starting point of analytic philosophy the positive answer to the question: *Should the analysis of language precede the analysis of thinking?* The philosophers who answer this question in a negative way either do not pay much attention to the problems of language, or approach language as yet another human ability which should not be a main focus of analysis. For instance, language per se and logics of language are of secondary interest for Merleau-Ponty. Moreover, there is one major point of difference between phenomenological and analytical accounts of language: in many analytic accounts, following the vein of Wittgenstein's *Tractatus*, language is seen first of all as a presentation of the world. According to Wittgenstein and some other analytic philosophers, the world is presented in logical structure and usage of language, and not in the act of perception as being-in-the-world. This difference of approaches has given rise to attempts to combine phenomenological and analytical accounts of language. Sean Kelly argues that such a combination is possible because analytic philosophy accounts for meaning *within* language, while phenomenology explains how language is capable of having any meaning at all.¹⁰⁵ Such a combination of philosophical approaches will be considered in chapter 3. Nevertheless, now I will focus on an account of language as a presentation of the objective.

In dealing with philosophical accounts of language, I must be imprecise and draw a very sketchy picture. The reason for this vagueness is the same as with the account of the objective in philosophy of science: there are too many variations of conceptualization of the objective in the field. In fact, sometimes language and the cognitive situation may be conceptualized diffe-

¹⁰⁴ Wittgenstein, *Philosophical Investigations*, §109–111.

¹⁰⁵ Kelly, 2001, 59.

rently even by the same author. For example, the picture of language and its role in cognition differs in the early and late works of Wittgenstein. Thus, in order to provide a brief and sufficient account of the objective, I have to cut off the particularities of debates upon language and focus on the main ideas.

I have chosen to use Wittgenstein as a representative example, as he can be considered the most influential for contemporary philosophy of language. Although, as I have already mentioned, his approach to language has changed from *Tractatus Logico-Philosophicus* to *Philosophical Investigations*, both of these books and the ideas expressed there became pivotal points for analytic philosophy in the twentieth century. Despite the differences between them, these ideas were developed by philosophers of the analytic camp. I will supplement an overview of Wittgensteinian ideas with interpretations both by Stenius, who focuses upon the logical issues of *Tractatus*, and by Tanesini, who provides a feminist interpretation, which is important for the consequent revision of the subjective and language.

So let us start with consideration of the main attitudes to the world and language in *Tractatus Logico-Philosophicus*.

The first important idea of *Tractatus* is that the world consists not of objects, as was held in traditional atomistic philosophy, but of facts. What is the case – a fact – is the existence of states of affairs. The facts are present in our thinking in the form of pictures isomorphic to the states of affairs. That means that the “pictures of facts concerning red flowers or green leaves need not have the colours 'red' and 'green' as elements... there must only be a structural similarity between a picture and its prototype”.¹⁰⁶ In turn, the propositions and sentences expressing them are also pictures. Thus, the world, a thought and a language are tightly bound together. They have similar logical form and can be mapped on each other. Language both speaks about reality and exhibits it. “And what a sentence exhibits but cannot say is the 'logical form of reality'. According to 4.12 this is something that a sentence must have in common with reality to be capable of representing it”.¹⁰⁷ Thus, the analysis of language only allows us to know the structure of the world, as the structure of reality is isomorphic to the structure of language. This attitude towards language leads to the isolation of investigations of analytic philosophy within the bounds of language. Indeed, if we suppose that the totality of the world is grasped by language, and “whereof one cannot speak, thereof one must be silent”,¹⁰⁸ there is no need to leave the grounds of language to look for knowledge of the structure of the world. This attitude, accepted by many analytic philosophers, will be criticized later.

Another important issue in *Tractatus* to be mentioned here is the place of the subject in the objective world. Here I will rely upon the feminist interpre-

¹⁰⁶ Stenius, 1960, 113.

¹⁰⁷ Stenius, 1960, 179.

¹⁰⁸ Wittgenstein, *Tractatus Logico-Philosophicus*, §7.

tation of Wittgenstein, as feminists are especially interested in critical investigation of the notions of subjectivity and objectivity, and criticize dualism.¹⁰⁹ In fact, as Tanesini shows, Wittgenstein's treatment of the subject is controversial and at some points his view may seem solipsistic.¹¹⁰ On the one hand, he writes that the "limits of my language mean the limit of my world" and that "the limits of the world are also [the limits of logic]".¹¹¹ From these pre-suppositions he derives a conclusion that "the world is *my* world".¹¹² Tanesini explains this move in his thinking in this way: "there can only be one subject, as the frame of the world, and ... each one of us is entitled to say that the world is my world. In other words, Wittgenstein shows that there can only be at most one metaphysical 'I'."¹¹³

But on the other hand, solipsism leads to realism once we realize that a complete description of the world leaves out the "I". So the subject in Wittgenstein's philosophy turns out to be "the metaphysical subject, the limit of the world – not a part of it".¹¹⁴ Thus, in Wittgenstein's view there is no gap between the objective and the subjective: if we approach the world as it is presented in language, this world is both objective and subjective, having the subject as a limit of the world.

In *Philosophical Investigations*, Wittgenstein proposes a different attitude towards language and the world. Here he focuses mainly upon the functioning of language instead of explicit metaphysical statements about the nature and structure of reality. He also uses lots of metaphors to support his philosophical arguments. Here the most important ideas are those of language games and of private language. The idea of language as a form of life, although not quite clearly articulated, was also very influential.

"So you are saying that human agreement decides what is true and what is false?" – It is what human beings *say* that is true and false; and they agree in the *language* they use. That is not agreement in opinions but in form of life.¹¹⁵

The idea of forms of life appears several times and is not expressed explicitly. But it has important ramifications for the further development of philosophy of language. This idea of language as a form of life can be supplemented by Wittgenstein's metaphor that attempts to reveal how this life is lived and how language is developing in human life. Here I refer to his metaphor of language as a river:

¹⁰⁹ Bordo, 1987; De Beauvoir, [1949] 1988; Tanesini, 2004.

¹¹⁰ Tanesini, 2004, 77–78.

¹¹¹ Wittgenstein, *Tractatus Logico-Philosophicus*, §5.6.

¹¹² Wittgenstein, *Tractatus Logico-Philosophicus*, §5.61.

¹¹³ Tanesini, 2004, 78.

¹¹⁴ Wittgenstein, *Tractatus Logico-Philosophicus*, §5.641.

¹¹⁵ Wittgenstein, *Philosophical Investigations*, § 241.

96. It might be imagined that some propositions, of the form of empirical propositions, were hardened and functioned as channels for such empirical propositions as were not hardened but fluid; and that this relation altered with time, in that fluid propositions hardened, and hard ones became fluid.

97. The mythology may change back into a state of flux, the river-bed of thoughts may shift. But I distinguish between the movement of the waters on the river-bed and the shift of the bed itself; though there is not a sharp division of the one from the other.

99. And the bank of that river consists partly of hard rock, subject to no alteration or only to an imperceptible one, partly of sand, which now in one place now in another gets washed away, or deposited.¹¹⁶

Thus, both the logical (the river-bed) and the empirical (the movement of the river) in language are shifting. As I have already mentioned in the chapter dedicated to the subjective, this metaphor of river-beds may be interpreted as equal to the idea of a conceptual scheme within which the life of language takes place. Here we can make one more important inference: the world we live within is constantly changing and moving. It is the motion of the river of language that allows changing the form of life and encountering new things through introduction of new terms and games.

In *Philosophical Investigations* there are also two ideas that disclose the necessity of the intersubjective for the objective: the idea of language games, and the argument against private language. The idea of language games signifies a radical departure from the early Wittgensteinian idea of meaning as pictorial representation of facts: “For a large class of cases — though not for all — in which we employ the word ‘meaning’ it can be defined thus: the meaning of a word is its use in the language”.¹¹⁷ The instances of the usage of language, revealing the meaning, are called language games. The rules of such games, just as the concept itself, are not clearly defined by Wittgenstein. Wittgenstein strives to draw the attention of the reader to language itself, and to the instances of its functioning. Thus, despite the changes of the attitude towards language, Wittgenstein keeps his focus and emphasis on language as presenting the world. If in *Tractatus* language relates to something that is outside (the world of facts), in *Philosophical Investigations* language is self-sufficient and needs nothing besides itself to be meaningful.

Wittgenstein defines private language as “a language which describes my inner experiences and which only I myself can understand”.¹¹⁸ He shows the unintelligibility of such a language by the following argument. For an utterance to be meaningful it must be possible in principle to subject it to public standards and criteria of correctness. But the “individual words of this lan-

¹¹⁶ Wittgenstein, *On Certainty*, 96–99.

¹¹⁷ Wittgenstein, *Philosophical Investigations*, §43.

¹¹⁸ Wittgenstein, *Philosophical Investigations*, §§243, 256.

guage are to refer to what can only be known to the person speaking; to his immediate private sensations. So another person cannot understand the language".¹¹⁹ Thus, as there can be no public verification of the correct usage of words and utterances in such a language, it cannot be considered a meaningful language. So the private language argument shows that the very possibility of language depends on the possibility of intersubjective agreement.

We can summarize the ideas of the objective devised from Wittgenstein's works in the following way. As we have observed, Wittgenstein moved in his thinking from the idea of the presentation of the objective in language (the idea of the thought as a picture of facts), to the view that it is action in the language-game which determines the states of affairs. This movement is important for our consideration, as it again points at the necessity of action in our relation to the objective. As in sociological and natural-scientific pictures, language according to the later Wittgenstein does not present the objective directly and in a rigid way, but requires action – a move in a language-game (2). The general access to the objective is provided naturally: as language is a form of life, we simply live in it.

The limits of the objective are put by the language we use. Language that does not satisfy the public-intelligibility demand cannot be considered genuine and meaningful language. Moreover, the meaning of language is revealed in language-games that take place in social interactions. Thus, intersubjectivity (3) is also taken into account. The only problem left is the folk criterion of the objective as mind-independent. Language as a form of life is mind-independent just as social realities are. But language does not exhaust the folk notions of mind-independence. As I have already argued in regard to Nozick's exposition of the objective, folk notions of the objective demand that there must be something beyond language, a physical reality that should be able to be accessed by other means than language only.

Thus, Wittgensteinian accounts provide an important and valuable vision of language and meaning. But he analyzes the world within the realm of linguistic and logical aspects only. This tradition has no tools that allow going out into the realm of the physical in order to combine the analytic considerations with immediate experiences. It has no vent to reality beyond language, as language and logic are embracing the structure of the objective. The states of affairs in the world only determine which propositions are true. That is why Sean Kelly made an attempt to complement analytic considerations with phenomenological tools in order to make a philosophy of mind *and* language.

Thus, although Wittgenstein provides an important development of the issues of the objective, his conceptualizations do not fulfill folk criteria of the objective. Wittgensteinian analyses of language should be supplemented with other traditions.

¹¹⁹ Wittgenstein, *Philosophical Investigations*, §243.

2.6 The structure of the objective and conceptual schemes

The problem of conceptual schemes is acute for all of the traditions we have reviewed with regard to the objective. In sociology the notion of conceptual scheme is used to account for various cultural worldviews and knowledge claims. In science the idea of conceptual scheme is used as an explanation of paradigm shifts, as Kuhn writes about. Finally, in the analytic tradition a conceptual scheme is held as a system within which the truth conditions of statements are to be determined. Wittgenstein does not use the notion of conceptual scheme, but his metaphoric account of a river-bed and the flow of the river can be interpreted in terms of conceptual scheme.¹²⁰

Moreover, a notion of conceptual scheme may appear indispensable for formulating the structure of the objective. As Putnam describes his own position, "It is characteristic of this view to hold that *What objects does the world consist of?* is a question which only makes sense to ask *within* a theory or description".¹²¹ But in all these cases of philosophical investigations of conceptual schemes there is a controversy about what should be considered as a conceptual scheme and whether we are fated to conceptual scheme relativism. That is why I have decided to give this problem a separate consideration.

This problem is related to the structural properties of the objective and could be formulated this way: *What is the nature of a conceptual scheme?* Does it consist of sentences, propositions, beliefs or something else? What allows the various conceptual schemes to be applied to reality with success? Any answers to these questions depend on the tradition that is chosen. As I have decided to refrain from using only one philosophical tradition as the framework of my investigation, I am going to address these questions from a different perspective. This means that I will not start with a definition of conceptual schemes. Instead, I will look for the answer to these questions on the basis of experiential issues and issues related not to the nature but to the functioning of the schemes. But first I will consider the main tenets of the problem of conceptual schemes and of object discrimination.

At first glance, there is no problem for common sense of what the structure of the objective is. A common person (and a common scientific realist) believes that there is a world with objects or things in it, which we experience. This belief makes us for example caring parents, as we believe that our kids really exist and need real warmth and food, not merely ideas or words. There are objective properties of things, such as temperature, size, etc. We experience them directly or with the usage of various tools that help us to improve and magnify our senses. We feel the temperature of the air and

¹²⁰ Lynch, 1998, 58.

¹²¹ Putnam, 1981, 49.

can measure it with a thermometer. We see the stars with our eyes and can magnify our sight with a telescope to see craters on the Moon. The temperature, the air and the moon are objective.

The problem is that we can apply different terms to distinguish and describe these things. These terms have the power to divide the world differently and to put various kinds of things together, thus yielding completely different pictures of the world. Natural languages exemplify the variety of ways in which we can divide the world around us. As Nozick puts it:

It is held that we can use different vocabularies to divide up the world, different terms to describe the world. Just as a jigsaw puzzle carves up a picture into different shapes, so too a language is able to carve up the world into various configurations. We use terms like “chair”, “house”, “nation-state”, and “river”, but some other culture and language, it is said, might divide things quite differently, for instance having a term “zanzar” that refers to anything which is either a chair or a river or a half of a house.¹²²

Nozick claims that this arbitrariness of division of the world does not mean that the statements containing such terms are also arbitrary and cannot be true. At this point the truth issue does not interest us. What is important now is the multitude of divisions in relation to the world, not to the statements in the language where they appear. So there is a serious question regarding the way in which our minds and languages divide the world. Is it divided in a natural way, so that we just “cut nature at its joints”?¹²³

The abundance of cultures and languages tells us that there are many possible ways of dividing the world. We can see plenty of examples of how the world is divided in the history of science. Let us consider, for instance, the series of speculations concomitant with the discovery of oxygen. As Kuhn has described it, there was a long and uneasy transition from the attempts to find phlogiston to the understanding that a different substance with different properties is present in the process of burning.¹²⁴ Quite the same process is taking place in the application of a new theory, for example quantum mechanics, to the old data and observations – the experiments related to light. What seemed to be a wave turned out to behave both as a wave and a particle.

Moreover, in everyday experience we sometimes devise things differently, especially when we speak about concepts which do not point at things like medium-sized dry goods. People argue whether a given color is green or blue, when childhood ends, and some also are capable of distinguishing sinfulness or impurity in people and things. Therefore we can hold language as the expression of a basic conceptual scheme, which speakers of this lan-

¹²² Nozick, 2001, 48.

¹²³ Plato, *Phaedrus* 265E.

¹²⁴ Kuhn, [1962] 1996, 53–58.

guage use. Sometimes the speakers are not aware of this scheme connected to the language until they learn another language.

Thus, a language and its conceptual apparatus are strongly connected to the division of the world into parts. And if we further apply analytic considerations, we can claim that only after this division is made and the language of description is settled, is the application of truth conditions possible.

Thus, the process of linguistic and pre-linguistic division of the world into parts will be of special interest for us in the chapter dedicated to empirical issues of cognition. It is quite justified to render language or culture as basic conceptual schemes. They are of a natural origin and therefore need no additional justification for their existence. But how can we account for conceptual schemes in natural science or sociology? What is a rationale for their existence, or moreover for their primacy and greater ability to reveal truths about the world in comparison with natural conceptual schemes?

Here we have to look for the way that conceptual schemes are produced and established. We have to uncover the process of the establishment of the intimate relations between language, scheme and world. Thus, the most important question for my investigation will be: *In virtue of what does the conceptual scheme connect to reality? What provides a relation between the concepts and the physical and social world?* By revealing the means of such a connection we could find the means of comparing conceptual schemes and the outcomes of their relation to reality. Therefore, we need to clarify the role of conceptual schemes for accounts of the objective and the way the objective is related to by the scheme. This will be done in the following chapter.

In conclusion, the answer to the question about the nature of conceptual schemes cannot be answered until we know how they function. These two issues are bound together, but we have more chances to explain the second one, as this issue can be brought from a purely conceptual level to the realm of the empirical. Here we can first consider the instances of human cognition and then conclude what amounts to the conceptual schemes there. The way conceptual schemes map to the objective is, in any case, mediated by humans.

But the issue of the relation of humans to reality requires investigations on the empirical level: we have to focus on this intimacy of the subject and object in the human body and in the act of perception that Merleau-Ponty speaks about. Thus in order to investigate this issue we have to account for perception, language functioning, etc., keeping in mind the problem of conceptual schemes. I will consider variations of human relations to the world, looking for the answer to the question: *Which role do conceptual schemes play in this instance of human cognition?* Thus, I postpone the solution of the conceptual schemes problem until the empirical issues of cognition are clarified.

2.6.1 Two kinds of world

There are some things in natural-scientific, sociological, and linguistic areas that are important in relation to conceptual schemes. Changes of and co-existence of conceptual schemes prove that the world's totality is not exhausted by a single conceptual scheme. As the world can be grasped in many schemes, we can infer that the objective surpasses any conceptual scheme. Otherwise the application of concurrent conceptual schemes could not fit the world as we experience it. Moreover, the discoveries that natural science has already made and continues to make show that although there is a world already grasped and conceptualized, there still are things which we have not approached yet. Just as, over the course of the history of civilization, cultures, languages and religions have emerged, developed, and vanished; science has discovered genes, new species, new stars. There is no reason to suppose that changes and discoveries will stop anytime soon. There are things beyond our current conceptual schemes, gaps within our conceptual schemes, new frontiers humanity strives to reach.

Thus I can distinguish two ways the objective can be rendered, in accord to the history of paradigm shifts and the discoveries of previously unknown things. I am going to distinguish the first order objective – a totality of the world, which includes both the scope of our current conceptual scheme and anything that is beyond the grasp of our conceptual schemes and is not yet approached by subjectivity at all – from the second order objective – the objective as it is given to us through our actions upon the world, such as perception, manipulation and various conceptualizations in scientific theories.

In this investigation I'm going to focus on the second order objective only, as the first-order cannot be comprehended by human minds at all. As there are infinite ways to conceptualize our relation to the infinite entity, the first order objective world will not be a part of our consideration. Actually, conceptualizing the first order objective is a tacit goal of the endless quest for knowledge, inherent in the human race and science, sociology and philosophy in particular. So an attempt to clarify and conceptualize the first order objective would be misleading for our work. It would only make a new metaphysics, which is not our goal.

So, with all the above said, I believe that a correct rendering of the objective must take into account the influence of human cognitive capacities and action upon the cognized world, and the difference between the world as it is by itself and the world as we perceive and map it to language and concepts.

2.7 Summary

As we have observed, scientific realism, social constructivism and Wittgensteinian philosophy of language provide a conceptual account for the objective mainly by assigning a domain to it and revealing the ways the subject is related to this domain.

Science deals with the objective in the domain of the physical-natural. Scientific realism claims that the objective consists of mind-independent objects the scientific theories describe (1). Moreover, even unobservable things, postulated by theories, are considered objective. The experiential access (2) is provided by experiments, which can be repeated by others, thus securing intersubjectivity (3). But, because natural sciences deal with very specific actions and objects, then everyday, religious, artistic and other actions and means of cognition fall out of its scope.

Sociology limits its investigations to the domain of the social. According to social constructivism, it is the actions of humans (2) that construct the objective (1). Thus, the natural remains outside of the scope of social constructivists' accounts. But the proponents of ANT claim that the material objects, beliefs and other things should be considered as actors involved in construction of the objective. This allows eliminating the division between natural and social, but makes everything constructed and all knowledge claims relative.

Wittgenstein and some analytic philosophers consider language as the domain of the objective. From the Wittgensteinian point of view the objective consists of the facts (1) and is isomorphic to language. Language does not present the objective in a specified way, but requires action – a move in a language-game (2). A genuine and meaningful language is intersubjective (3). In Wittgenstein's account there is no subject-object gap, as the subject is a limit of the world. But this focus upon language does not grasp the non-linguistic relation of human to reality – our immediate bodily experiences.

If we now recall the basic folk notion of the objective as the world, we can see that the philosophical accounts, observed in chapter 2, aim at various aspects of the world. They highlight some properties of the objective, showing the possible actions to be taken by the subject upon the selected aspects of the world. The revised conceptualizations have some problems, which I have also dwelled upon. Therefore, in our conceptual restructuring and in revision of the empirical issues of cognition, we have to keep in mind all these conceptualizations as well as the limits of their scope and the relation to the objective they propose.

At the same time, the examination of conceptualizations has evoked new issues for our investigation. The problem of action and conceptual schemes is crucial for human dealing with the objective. Let us summarize the features of the approaches to the objective observed above.

1. From this overview of conceptualizations of the objective it is now quite clear that a strict ontological border between subjective and objective is not justified. Cognition is an action that requires both an active perceiving subject and an object accessible to the actions taken by a subject.
2. Moreover, sociology's approach to the objective makes intersubjectivity a crucial property of the objective. We have to include in an account of the objective the issues produced in social relations: concepts, structures, attitudes of action.
3. Access to the objective in science and society is provided through organized rule-governed action.

Thus, the objective is accessed in any case through a non-deliberate action. In science the action is governed by the rules of scientific method and a theory, and requires a certain place and instruments to reach the objects of which science speaks. In a sociological account the subject is already included in the objective, as a human is a member of society, thus an action is governed by society and social institutions. In the later Wittgenstein's account, action is governed by the moves in a language-game. The rules and limitations enforced upon action leading to the objective may differ, but the main concept remains the same: in order to relate to the objective, a rule-governed and non-deliberate action should be taken. I consider this persistence of action in different accounts of the objective to be important. But I am not going to make any inferences about the role of action now. First I have to account for the empirical issues of a subject-object relation.

Moreover, in all these accounts we see the connection of objective-revealing action to some linguistic structures. It might be theories and conceptual schemes in science, language itself and language games in the analytic tradition, or discourses of social groups and conceptual schemes in sociology. Thus, the problem of conceptual schemes should be considered also in relation to the question: *How do these schemes affect rule-governed action as a means of access to the objective?*

Thus, the following issues should be accounted for in the next chapter:

1. The relation of subject to objective in the cognitive situation.
2. The role of rule-governed action in cognition.
3. The role of language and conceptual schemes in cognition.

In the upcoming considerations of the empirical issues of cognition I will pay special attention to the problems related to structured action and language connected to such action. We will see how this notion, common for all the revised traditions, can be used to clarify and re-conceptualize the cognitive situation.

PART II: EMPIRICAL ISSUES

3 Empirical approaches to the cognitive situation

3.1 The results of the conceptual investigation

Before we turn to empirical issues let us see what is completed up to now. In previous chapters I have fulfilled the first and second stages of the task of investigation of the cognitive situation. In order to clarify the cognitive situation, taken in a traditional dualistic sense – as the relation between the subjective and the objective – I have formulated the folk notions of the subjective and the objective and considered various conceptualizations of these issues. Then I have compared how well the latter satisfies the former.

But this consideration and comparison have revealed that the observed conceptualizations have some limitations and problems. Each of them highlights certain aspects of the subjective or the objective and explains only some of the folk notions, neglecting the others. Moreover, this investigation revealed the problems inherent in these conceptualizations. Therefore, I cannot use any of these conceptualizations of the cognitive situation “as they are” with all their presuppositions and limits. Some other conceptualization must be devised for further investigation of cognition.

But still the revision of these concepts was not vain. Although I cannot base further investigation upon any of these conceptualizations taken at face value, I can still extract some important ideas to be applied in relation to empirical issues of cognition.

These conceptual systems and their accounts for folk notions indicate some important issues that are indispensable for my goal. Despite their differences of approach and conceptualization we can distinguish that some of them explain folk notions in a quite similar way. They do not paint incompatible, arbitrary pictures of the world or cognition. To the contrary, we can figure out the main, common direction they aim at. These conceptualizations have common underpinning notions of the cognitive situation.

Dealing with this commonality of conceptualizations I am using the presupposition that the intersubjective agreement evident in these conceptualizations is not occasional. Despite their differences, they have some general intuitions in common. Thus, a similarity of conceptualizations hints at some important properties of the cognitive situation. Consequently, these commo-

nalities deserve to be paid a special attention in research and to direct my investigation. I will summarize these commonalities.

Common concepts will be listed first. We have observed that a rule-governed action is a means of access to the objective according to science, sociology and analytic philosophy. Language and some schemes, mediating cognition, are also necessary for any conceptualization. I will not make attempts to distinguish the subjective and the objective on the empirical level either, as due to our considerations of the concepts it is unjustified to draw a strict ontological border between subject and object. As this distinction is problematic, it does not seem wise to strive to enforce it upon the observations. Thus, I am choosing a different way. I will use the conceptualizations that are promising and fruitful and focus upon them, postponing the solution of the border between the subjective and the objective. The common concepts I am going to use for the evaluation of empirical findings are the following:

- cognitive situations;
- rule-governed action;
- mediating structures (conceptual schemes);
- the first order objective (the totality of the world);
- the second order objective (the conceptualized world).

So there are several features, distinguishable in the conceptualizations of the cognitive situation, which are candidates for being characteristic of the cognitive situation, and which must be paid special attention. The investigation of conceptual systems led to identification of the most important and fruitful ideas. Some of the latter were chosen because they are shared by several accounts, while others were chosen for their usefulness and the most successful applicability to the cognitive situation. Thus, I have devised the following shared ideas as the most important features of the cognitive situation I have to account for:

1. unity of subject and object in cognition;
2. a special role of the body in cognition;
3. rule-governed action as a means of access to the world;
4. mediation in cognition;
5. language and conceptual schemes shaping cognition.

The first was explicated by Kant and later developed in cognitive science. The second and the third were investigated by analytic philosophy and could be considered as a special case of mediation. But I am not going to limit possible kinds of mediation solely to language. Also, as conceptual schemes are usually related primarily to language, I am going to consider them separately and devote a separate investigation to language. Another idea is action

as a means of accessing the world. We have seen in the previous chapter that structured action plays a crucial role in the access to the objective in such different accounts of the objective as those of natural science, sociology, and analytic philosophy.

The most applicable and useful ideas are the unity of subjective and objective in cognition and a special role of the human body in cognition. These features are not inherent in only one conceptualization, but show up and become problematic in various conceptual systems and their applications. We have seen that the unity of subjective and objective, exemplified by the human body, is an irresolvable problem for the Cartesian system. The issues related to this intimate link become problematic for scientific realism. This unity was stated by Merleau-Ponty in his system, and this statement makes a step towards a non-dualistic approach, but still Merleau-Ponty keeps using the conceptual distinction between the subjective and the objective. Thus, these ideas at the same time represent the puzzles of the cognitive situation that will be solved with the help of empirical data.

As no singular conceptualization accounts for all of these features, I am going to propose my own conceptualization of the cognitive situation on the basis of the aforementioned issues. Instead of attempting to distinguish the subjective and the objective in empirical accounts, I will pay attention to the instances of their interrelation that I emphasized in previous chapters: action, language, mediating schemes, and body. But I need to postpone a full-blown clarification and formulation of such a system. First I will consider how the cognitive situation is accounted for by empirical observations. The listed features inherent in the cognitive situation demand deeper investigation on an empirical basis. Thus I will proceed with accounting for the empirical issues of cognition, aiming at clarification of the conceptual features listed above. As a conceptual basis for this part of the task, I am going to use a cautious preliminary formulation of the cognitive situation.

I will consider the cognitive situation in general, looking for the particular processes, such as perception, taking place in it. Thus, my preliminary formulation is the following: *The cognitive situation involves rule-governed action on the basis of linguistic and conceptual structures. The conceptualizations, resulting from this action, constitute the second order objective.* Thus, I will now proceed to the empirical observations, paying special attention to the issues of language and action in the acts of cognition.

As we are now aware of some philosophical presuppositions of cognitive science, sociology and natural sciences, we can safely use their results with some restrictions. The restrictions relate to the presuppositions, structures and limits these traditions impose upon the cognitive situation. We need to be aware of those while considering the results that are intended to be a source of the data helpful for clarification of the aforementioned features of cognition. These empirical accounts are supposed to hint at the structure and

interrelations within the cognitive situation that I strive to clarify and conceptualize.

3.2 Using empirical findings for philosophy

In order to begin my enterprise of dealing with empirical findings for philosophical aims, I want to clarify some important points to avoid possible misinterpretations. I should reveal the aim, the way and the reasons for my dealing with the empirical findings.

The usage of empirical results for the philosophical task can be objected to by some philosophers. It is argued that philosophical reflection should precede empirical research, as philosophy has primacy over empirical findings and does well without them. But in fact in this investigation I do not intend to deal with the issue of primacy between philosophical reflection and empirical research. Instead, I am interested to show how both these endeavors influence and complement each other in constantly ongoing processes.

My goal is not to replace either immediate bodily experiences, investigated by phenomenology, or philosophical reflection in the first person perspective, with empirical findings. Our bodily experience is always the first and the most basic level of cognition. Therefore, we can never disregard it or replace bodily experience with empirical theories. But how we philosophically reflect upon experience is a mixture of taking account of bodily experiences, philosophical concepts, and what we know from science. Scientific ideas such as relativity of time and space, neuronal functioning, and indeterminacy, affect our thinking, as these are part of general human knowledge, shaping our worldview. Moreover, when we encounter problems with our immediate bodily experiences – for example, inability to acquire new memories – we do not perform phenomenology. Instead we go to a physician to be treated on the basis of scientific methods and scientific notions of diseases. If we, as philosophers, accept medicine, based on science, we have to admit that science possesses important knowledge about humans, our minds and cognition. Thus, I aim to take into my account of cognition the issues that are a part of our lives and a source of some of our experiences and concepts. Scientific knowledge is a part of our life, influencing the way we cognize and relate to the world. Thus, how we philosophize on philosophical grounds needs to have an account of empirical findings as well.

Another argument against usage of empirical findings considers certain limitations in empirical studies: the sensual data is used to verify other sensual data, leading to a kind of circle. The existence of such a circle may be regarded by some scholars as disqualifying the usage of empirical data for philosophical purposes. But here I want to evoke the same argument in favor of usefulness of sense data for philosophy that I have already proposed in the

introduction. First of all, we can see quite the same circle if we question the reliability of the traditional philosophical instrument –reasoning. Indeed, we use reason to verify the results of our reasoning, which also creates a circle.

But we cannot avoid this circularity in our overall human condition, as it is our human predicament. In this predicament a view from nowhere, verifying our senses and reason, is not possible. We are already inside of our reasoning and sensual experiences and cannot go out to check whether these instruments are correct. Thus, we have to accept our predicament. But we can use what we have inside of our predicament to support one kind of data with another. In certain situations where we have to check whether our sensual experiences are correct we need some criteria for reliability. Thus, we can use measurements made with some instruments to correct our other sensual experiences. As we are prone to some visual illusions and miscalculations we can use the instruments proposed by science as providing a criteria for correction of our other sensual experiences.

Thus, I propose to regard senses and empirical data, as well as reason, not as a general criterion of reliability, but as an instrument for certain situations. Since we have the general human predicament, in some situations we need some other criteria than our direct bodily experience: here science helps us. This is how I am going to use empirical data.

3.3 Methodology of the investigation

So now we have to move to the third stage of the task. Here I am going to make an overview of empirical results of various sciences, and of philosophical evaluations of the empirical data regarding the subject and the object in cognition. First I will turn to the accounts of perception and cognition made by contemporary traditions: mind sciences in combination with philosophy of mind and phenomenology. I will include some data of cognitive science, biology, psychology, neurophilosophy, and neurophysiology. In order to investigate the problem of the subject and object unity in human body I will interpret the accounts of the basic cognitive act – perception – made by these traditions. I will investigate the problem of human cognition, putting an emphasis upon a phenomenological perspective. Here phenomenology is introduced in a new way: not as a source of concepts, as I have used it in the first chapter, but as a source of observations and descriptions of human experiences.

I have chosen to combine the data of the above-listed scientific and philosophical traditions for several reasons: first, among all philosophical branches it is phenomenology and philosophy of mind that maintain cognitive abilities of humans as the major focus. They are the main veins of philosophy dealing with the problems of perception and cognition nowadays. Second, phenomenology and cognitive science have reached impressive

results in their investigations and are most influential in the field that interests us here. Third, they provide contrasting frameworks and theories of human cognition and appear to be competing in the field of the study of human cognition. Despite the fact that both account for similar problems, there is a difference in approach and selection of aspects of the subjective they investigate. Phenomenology works mostly on the level of immediate unconceptualized human experience and the first-person perspective, while cognitive science strives to provide theories and explanations that approach human cognition from the *third-person perspective*.

Nonetheless, these traditions are nowadays striving toward reconciliation. The steps to this reconciliation are made both from the phenomenological and from cognitive camps. Cognitive scientist and neurophysiologist Alva Noë together with neuroscientist Luiz Pessoa and philosopher Evan Thompson claim that within the scientific third-person perspective:

There is no place for the autonomous investigation of human experience, that is, for the conceptual and reflective examination of human experience as it is lived, independent of scientific accounts of the brain. We think that this lack of concern for the autonomy of human experience is unacceptable: cognitive science must include reflective examinations of human experience in addition to causal-explanatory theories.¹²⁵

Phenomenology today investigates human cognition in collaboration with philosophy of mind and cognitive science.¹²⁶ The latter is currently establishing “mutually informative dialogue with phenomenology”, as Froese and Gallagher call this process. These authors state: “The empirical study of cognition has started to pay more attention to phenomenology, and to incorporate phenomenological insights and methods into experimental protocols”.¹²⁷ Phenomenology is proposed by such scholars as Lutz, Gallagher, Varela and Sorensen as a valuable basis for the scientific investigation of the human mind and cognition. It is worth mentioning that a journal, *Phenomenology and the Cognitive Sciences*, is dedicated precisely to investigations merging phenomenological and cognitive endeavors. Nowadays the first-person perspective of phenomenology is proposed as combinable with the third-person accounts of cognitive science.¹²⁸

Thus, I believe that in order to conceptually reconstruct the cognitive situation we have to turn to both these traditions. But I have to make it clear that although I am going to use the results of cognitive science, I do not adopt its method and presuppositions. Cognitive science, despite the relevance of its findings to phenomenology, has certain philosophical presuppositions as its

¹²⁵ Noë, Thompson and Pessoa, 1999, 161.

¹²⁶ This collaboration has resulted in the formation of a new branch of investigation: neurophenomenology. Laar, Regt, 2008, 291.

¹²⁷ Froese, Gallagher, 2010, 86.

¹²⁸ Overgaard, Gallagher and Ramsøy, 2008, 100–120.

basis, as was shown in the first chapter. It is based on a Kantian picture of the cognitive situation, with the notion of mediating categories as a central feature of human cognition. Hence it attempts to explain the observed issues in terms of some structures inherent in human mind, which process the data a human receives from the world.

Cognitive science is primarily aimed at giving explanations in terms of computation and representation. The models of the human mind presented by cognitive scientists often reduce the functions of the brain to computation in accordance with some rules, and representation. Some branches of cognitive science go even further, attempting to simulate the human mind with computer models of neuron networks. The approach, depicting the human mind as computation-representation mechanism, both has advantages and restrictions. Some of the restrictions are incompatible with the approach I am adopting for this research. They are the following:

- Cognitive science disregards the significant role of physical environments in human thinking.
- It often ignores the embodiment of human thought and action.
- It disregards the fact that mind is a dynamical, not a computational, system.¹²⁹

So we can conclude that despite the abundant data gathered through experiments, the paradigm and conceptual apparatus in cognitive science are still mainly bound by a Kantian schema and computational models. This hinders the inclusion of such concepts as embodiment in cognitive research. Nevertheless, the application of a phenomenological approach has already started and looks quite promising.

Thus, the findings of cognitive science could not be taken per se, without necessary conceptual restructuring. So I am going to make an attempt to combine the findings of cognitive science with relevant phenomenological schemes in order to create a coherent picture. In order to integrate the findings of cognitive science with phenomenology carefully we need to keep in mind such basic presuppositions. That is why I had to linger on the clarification of these philosophical presuppositions in the previous stage of my work.

This preference towards phenomenology does not mean that I am going to neglect other important branches of philosophy. On the contrary, I am going to consider the results of other influential contemporary traditions, such as analytic philosophy and philosophy of mind. But their ideas will be used in combination with the sciences according to the properties of the objective

¹²⁹ Lately the attempts to fill in these obvious gaps of cognitive science have started to appear. For example, some authors strive to enrich cognitive science with a wide range of ideas and theories, such as Dynamic System Theory, embodiment, self-organization, etc. Tschacher and Dauwalder, 2003.

the sciences focus upon: language and physical world. I will invoke their ideas in the parts dedicated to physical properties of the world and language.

The next step is the choice of methodology. Phenomenology and philosophy of mind and cognitive science cannot be merged in a simplified manner. We need to find some way to reconcile them so that they will not conflict in terms and descriptions. One kind of approach to such reconciliation was proposed by Sean Kelly.¹³⁰ Although phenomenology cannot be considered as an enterprise developing primarily at a conceptual level, its concepts and discoveries are still highly valuable for this research. Phenomenology is aiming at metaphysically presupposition-free description of immediate experience. As Sean Kelly states, this makes the results of phenomenology very convenient for integration with the mind sciences, aiming at explanation. He points to the claim made repeatedly by Dreyfus in his work with the neurophysiologist Walter Freeman. This claim is simple, but new: phenomenology and brain science are not at odds with one another. They are interested in the same issues of human cognition, but their approaches differ. So there are no obstacles to put together these distinct fields. But how can this possibly be done? Kelly proposes that the right relation between phenomenology and brain science is that of data to model:

brain science is ultimately concerned with explaining the way the physical processes of the brain conspire to produce the phenomena of human experience; insofar as phenomenology devotes itself to the accurate description of these phenomena, it provides the most complete and accurate presentation of the data that ultimately must be accounted for by models of brain function. Thus, the phenomenological account of a given aspect of human behavior is meant to provide a description of those characteristics of the behavior which any physical explanation of it must be able to reproduce.¹³¹

Thus, this step into phenomenology will allow us to make a smooth transition from a phenomenological philosophical approach to the domain of experimental sciences. Moreover, phenomenology, as a general endeavor aimed at the first-person description of human behavior, might be combined not only with cognitive science, but also with the accounts by other sciences concerning cognition, perception and action. Phenomenology's focus on first-person accounts can complement scientific third-person perspectives.

Phenomenology deals with human cognition on the most intimate level, which allows it to investigate it without unnecessary objectification. It is phenomenology that keeps the subjective properties of the subject during observation. That is how phenomenological descriptions of the subjective can be combined with scientific observations – on the condition we keep the shift of perspective clear. We can investigate a certain phenomenological

¹³⁰ Kelly, 2001.

¹³¹ Kelly, 2001, 152.

account of an aspect of cognition, compare it to the scientific accounts, provide a conceptualization and then return back to the level of phenomenological descriptions to test our conceptualization. So for the clarity of my research I will make shifts from phenomenological descriptions to the level of conceptualizations and then back again. Thus, the conceptualizations can be checked for accuracy and fitting the data. I am going to use this strategy in the following.

There is one more important point to be clarified. In fact, for the investigation of cognition we need to be aware of two perspectives: individual and intersubjective. Mind sciences mostly investigate human cognition from the individual perspective, and phenomenology deals both with the individual and intersubjective. But both individual and intersubjective are essential for cognition: we are social beings, yet society cannot exist without individuals. Thus, the data of cognition on the individual level, provided by mind sciences, will be complemented by the phenomenological perspective on the intersubjective in cognition.

Finally, the descriptive accounts and concepts of phenomenology can be used as a basis for construction of revisionary conceptualizations. As revision of basic concepts of cognition is one of the goals of this work, the accounts and ideas of phenomenology are relevant for achieving this goal.

4 Phenomenologically-oriented research

As I have sketched the main concepts I am going to use and revealed the method of research I am going to apply here, it is time to start to investigate empirical issues. With the issues and problems related to the cognitive situation now uncovered, let us attempt to clarify them from the empirical perspective by application of the facts discovered by science and phenomenology.

Scientific discoveries of the twentieth century, based on investigations of the inner structures and properties of human mind, have drastically changed the traditional notion of the subject. This endeavor started with the discovery of the unconscious. Freud has demonstrated that our consciousness is only a tip of the iceberg of our mind. We are driven by beliefs and feelings we do not know about. That claim undermined the Cartesian notion of the subject as purely rational and transparent. Further discoveries by psychology kept undermining the position of the subject as a flawless and transcendental agent. It became clear that it would not be possible anymore to depict the subject as separate from the objective and unaffected by it – for example, the body of the subject. Mind and body are inseparable, especially in the process of cognition, as stated by Merleau-Ponty. However, the idea of embodiment was widely accepted by philosophy of mind only recently. Cognitive science, influenced by the Kantian picture of cognition, for a long time neglected to approach the human body as an important part of the cognitive system.¹³²

In a long and even smooth process, more and more features found inclusion in the idea of the cognizing subject. The inclusion of the human body in a description of cognition lead to the investigation of enacted cognition and embodied subject. But a body cannot be extracted from its environment. Nor can an action exclude the instruments it uses, or humans be extracted from a culture and society. Thus, the accounts of cognition introduced ever more features indispensable for a correct description of cognition. Here I will consider the main features and their roles in cognition, accounted for by phenomenologists and phenomenologically-oriented cognitive scientists.

¹³² Gibbs, 2006, 3.

4.1 Embodied cognition

I have already mentioned the recent acceptance of the idea of embodied cognition. But since the introduction of the concept of embodiment by Merleau-Ponty, philosophers and scientists, following the demands of empirical investigation, have added several other concepts, which could be seen as even more radical. Nowadays cognition and perception are placed in a system of interactions that includes not only brain processes, but also the instruments a subject uses for cognition, the environment where the subject is situated, and the context of a particular act of cognition. This has led to the formulation of the 4E of cognition, now considered to be embodied, embedded, enactive, and extended.¹³³ First I am going to focus on embodiment. As this idea is very important for my research, it is necessary to give an overview of its main components.

The embodiment of cognition means that the structural and functional design of the body shapes the way that we experience the world:

Thus, for example, the shape, structure and proportions of the foot, ankle, knee, hip, limbs, and vertebral column, require a specific musculature and nervous system design, which in turn permits the specifically human development of shoulders, arms, hands, skull and face. These physical facts, which we live as we live our body, constrain what counts as affordances and thereby what counts as the world. The postural possibilities that come with standing and walking affect what we can see and to what we can attend. In standing, for example, the range of vision is extended, the environmental horizon is widened and distanced, the spatial frame of reference for perception and action is redefined. Standing frees the hands for gnostic touching, manipulation, carrying things, and tool use, all of which build upon and transcend grasping.¹³⁴

This position can be criticized as a view from nowhere: how can we compare what we count as a world with what possibly can be counted as such? But such an objection can be answered this way: the changes in our bodily abilities and addition of instruments alter the way we experience the world. When we experience temporary inability, such as a broken leg, we feel that the world shrinks, as we cannot do a lot of everyday things: no sports, no hiking, no dancing, etc. Mountains, bikes and dance floors are not a part of available world anymore. After we recover from this inability, the world expands again. When we start to drive a car, the world changes for us: the distances are felt to be shorter. Thus, using our experience, we can identify the influence of our embodiment upon our perception of the world.

Thus we can see from this quotation that embodiment affects not only the way we approach the world, but also what is counted as the world. The em-

¹³³ Gallagher, 2008, 163.

¹³⁴ Gallagher, 2008, 164.

bodied nature of cognition determines what we approach in our empirical relation with the world. Moreover, it determines what counts as the world: which objects we are capable of detecting and manipulating due to affordances of our body. Thus, embodiment determines the world that we live in, perceive and respond to. Our embodied cognition affords us an access to selected aspects or parts of the first order objective.

But embodiment of cognition entails that the accounts of cognition must include the description not only of those interactions between our bodies and the world that are available for observation or intentional action. There are lots of other processes and parts in our bodies that we cannot observe. For example, we cannot observe neurons or singular muscles. But empirical data gathered by science show that we cannot exclude those small things from accounts of cognition. Moreover, as phenomenologist Gallagher states, many aspects of embodiment, for example maintaining posture, operate below the threshold of conscious perception, in an automatic way.¹³⁵ Thus, here we can draw a line distinguishing the phenomenological approach from that of science. As the sub-personal level is unreachable by human direct observation, no first-person observation is possible here. Thus, only science is capable of accounting for embodiment and enactment on the sub-personal level.

So the accounts of embodied cognition should maintain the distinction between the processes that can be related to and observed by us directly and the processes that we have no immediate access to. It is an important distinction for the accounts of cognition. Henrik Bruun and Richard Langlais propose the following description of the two levels, and the conceptual approach to them:

There are two levels at which the activity and receptivity of living beings can be described. There is, first, what has been called the sub-personal level of material flows. The second level can be called the personal level of action and perception... It is important that we distinguish between these two levels because they are not necessarily isomorphic... Key concepts in sub-personal terminology will be input, output, singularity, feedback, network, sign and computation. Personal terminology, on the other hand, consists of terms like perception, interpretation, intention, action, perspective, purpose, etc. What distinguishes the sub-personal from the personal level is that the former refers to material processes, while the second concerns processes that require consciousness or awareness.¹³⁶

Thus, Bruun and Langlais express an important distinction, which at the same time makes things more complicated. In fact, it is not clear how the processes of the sub-personal level are related to the instances of the personal level. The difference in terminology makes the formulation of the account

¹³⁵ Gallagher, 2005, 44.

¹³⁶ Bruun and Langlais, 2003, 37.

embracing both levels even more complicated. We will consider in the following parts some attempts to link these levels.

Let us now proceed with a short overview of the influential work of Andy Clark, which has urged a process of reevaluating the idea of extended cognition in philosophy of mind. Clark's account is notable as it originates from the camp of cognitive science and is based on robotic simulation, but nevertheless is used widely by phenomenologists. They apply the statements of this account to higher orders of cognition.¹³⁷

Andy Clark's book, *Being There: Putting Brain, Body, and World Together Again*, is based on a wide range of examples from such fields as artificial intelligence, cognitive science, and computer simulations. This book begins with the radical departure from a previous vision of cognition and formulation of the main idea of embodiment:

We imagined mind as a kind of logical reasoning device coupled with a store of explicit data – a kind of combination logic machine and filing cabinet. In so doing, we ignored the fact that minds evolved to make things happen. We ignored the fact that the biological mind is, first and foremost, an organ for controlling the biological body. Minds make motions, and they must make them fast – before the predator catches you, or before your prey gets away from you. Minds are not disembodied logical reasoning devices.¹³⁸

The idea that in fact minds are for actions is a general notion in the embodied and enactive approach. Furthermore, Clark argues that the greater part of cognition takes place in the form of immediate interplay between simple embodied functions and environment. Clark proposes a picture of a “collection of competing behaviors” orchestrated by environmental inputs¹³⁹.

There is no clear dividing line between perception and cognition, no point at which perceptual inputs are translated into a central code to be shared by various onboard reasoning devices.”¹⁴⁰ In order to prove his point Clark turns to the work of Rodney Brooks and his colleagues at MIT. In their autonomous agent research, Brooks et al. build simple creatures that are capable of robust action in a dynamic environment. For example, robot “Attila” constructed by Brooks can walk around on its own and avoid objects, thus displaying intelligence comparable to that of an insect. These robots prove that a successful behavior may be reached through embodied coping with environment without any representing mind and application of the concepts.

Thus, the idea of embodiment proposed by Clark departs from the Kantian picture of cognition as a central intellectual process mediated by concepts, for an idea of an immediate interaction between the parts of a body with the environment. Central intellectual processing of the percepts and

¹³⁷ Gallagher, 2008, 166.

¹³⁸ Clark, 1997, 1.

¹³⁹ Clark, 1997, 26.

¹⁴⁰ Clark, 1997, 14.

conceptual apparatus are not necessary for successful coping with the environment, as the experiments show. Clark's experiments and theory exemplify the conception of the unity of subject-object relation in the body, proposed by Merleau-Ponty.

Additionally, Clark makes an important point related to the model of cognition and perception that he proposes; this idea affects both the higher levels of cognition as well as the sub-personal ones. If cognition is based on immediate embodied coping with the environment, it is the elements of the environment an organism acts upon and attends to that can be counted as a world. Clark claims that the organism perceives reality not as it is, with all its colors, objects, sounds, etc., but according to the organism's needs and to the interactions with reality that the organism's functions are designed for. This shrinks the world to the *Umwelt* – the effective environment an organism lives in and responds to.¹⁴¹ “The effective environment is defined by the parameters that matter to an animal with a specific lifestyle. The overarching gross environment is, of course, the physical world in its full glory and intricacy.”¹⁴² Consequently, the world is perceived differently depending on the functions and the aims of the organism. This idea is compatible to phenomenological accounts claiming that embodiment influences what is considered as world.

The picture of embodiment rendered by Clark is closer to robotics and artificial intelligence. It focuses on the low-level functioning and mechanisms of cognition – realized in human, insect or robot. Nevertheless, Clark's work is received by externalists and phenomenologists: Shaun Gallaher, for example, uses it for his account of embodiment, focusing upon human cognition and high-level particularities of embodiment.

The existence of two levels on which embodiment influences our cognition allows us to make the following statement regarding the unity of subject and object in the human body. First of all, embodiment allows the process of cognition to take place on the sub-personal, mechanical level. Here the unity of the objective and the subjective is realized through the “collection of competing behaviors”¹⁴³ orchestrated by environmental inputs, as Clark describes. Second, as was stated, the embodiment shapes and shrinks the first-order world, turning it into *Umwelt* in accord with particularities of our bodies.

Thus, the second feature of embodiment limits our cognition. However, the introduction of new instruments to the process of cognition may extend the limits which embodiment imposes upon us. Invention of telescopes, microscopes, airplanes, etc. has changed the way we encounter the world and

¹⁴¹ The word *Umwelt* as a special term is originally coined by Jacob von Uexkull in 1934 in a monograph “A Stroll through the Worlds of Animals and Men: A Picture Book of Invisible Worlds” (Clark, 1997, 34).

¹⁴² Clark, 1997, 24.

¹⁴³ Clark, 1997, 26.

extended what we consider as the world. The usage of instruments reveals the *extended* property of human cognition. We use instruments to extend our bodily capabilities or compensate deficiency. Clark and Chalmers use a clear example to show that cognition can be extended beyond the subject's bodily boundaries.¹⁴⁴ They propose considering a case of Otto, who has Alzheimer's disease and so uses information in a notebook to organize his life. When he learns something new, he writes it in the notebook, and looks it up whenever the need arises. The notebook is an integral part of his day-to-day life. Clark and Chalmers claim that Otto's notebook is functionally identical to the biological memory of other people. There are other examples of extended cognition, where some instruments or actions are used as *external scaffolding*. As the human mind is poor in logic and planning, it is common for us to use pen and paper as constitutive parts of mathematical tasks.¹⁴⁵

This approach may be objected to in this way: when somebody makes a mistake while using pen and paper for calculations, we criticize the human, not the pen and paper. It is the human who may forget something; a notebook cannot be criticized for forgetting. But I can answer this objection. Notebook, pen and paper are tools we use, functionally equivalent to our neurons and other cognitive faculties. Our neurons also do not make mistakes, yet they are constitutional for our cognition, and problems in their functioning contribute to mistakes. Thus, we need to distinguish agency from various things which constitute cognition (neurons, body, pen, notebook).

Our cognition is embodied in the sense that our bodies play an indispensable role in our cognitive processes, both on the personal and sub-personal levels. The body also determines what counts as world and limits our cognition to the *Umwelt*, although cognition can be extended with the use of instruments. Nevertheless, we are unable to change radically the basic limitations of our body, such as its size, weight, sensual capacities, etc.

4.2 Enacted cognition

Here we have to move to the next feature of cognition, related to embodiment: enactment. I will linger a bit longer here, as action is one of our main focuses in relation to cognition. Here I will consider the results of phenomenology, cognitive science and sociology, as action is one of the central issues of their concern. As a result, there are many ingenious works dedicated to actions combining the results of these traditions and quite often using phenomenology as a basis. I will revise here the works by Henrik Bruun and Richard Langlais, Alva Noë, Anthony Giddens and some others. They ap-

¹⁴⁴ Clark and Chalmers, 1998, 7–19.

¹⁴⁵ Clark, 1997, 61.

proach the problem of action from different perspectives, but we can combine their results in order to get a coherent picture of action in cognition, taking account of physiological, personal and sociological dimensions of action.

What do we consider as action concerning human cognition? Action is usually defined in terms of *intention*. Bruun and Langlais emphasize that we need this concept in order to distinguish the entities in our action that can be considered causal origins, from those that cannot. Intention here implies the capacity of humans to direct their actions to parts of the world. It is intention that allows us to distinguish action from reflex or uncontrollable physiological processes. Intended actions are constitutionally dependent on material factors, such as neurological processes, the particularities of our environment and the instruments we use. Actually, action as a property of cognition can hardly be detached from embodiment. As action requires a body with all its faculties and depends upon bodily affordances, action is also embodied.¹⁴⁶ Therefore, a description of action requires the inclusion of the body and the environment it exists in. Just as accounting for perception of an apple requires including the apple, accounting for breathing requires including air and lungs (possibly even an oxygen mask, which affects the process of breathing).

But in speaking about this inclusion we have to distinguish between two levels mentioned above: sub-personal and personal. Here is how Bruun and Langlais explain this:

It is important that we distinguish between these two levels because they are not necessarily isomorphic... The hypothesis is that the two levels interact, but that they are not necessarily isomorphic: the phenomena at one level do not necessarily have equivalences at the other level. A particular conscious thought, for instance, does not necessarily have an isolatable equivalent at the neural level.¹⁴⁷

Thus, the distinction of two levels prevents mixing ideas from one level with observations concerning the other. If we can speak of intentional action, such as grasping an apple, on a personal level, we cannot meaningfully speak of intention at the level of neurons. Humans cannot direct their intentions to singular neurons, despite the fact that neurons make fulfillment of intention possible. Nevertheless, Bruun and Langlais strive to show that “there is interaction between the levels and that an understanding of sub-personal level processes can be important for understanding the dynamics of personal level events”.¹⁴⁸

¹⁴⁶ Bruun and Langlais, 2003, 32.

¹⁴⁷ Bruun and Langlais, 2003, 37.

¹⁴⁸ Bruun and Langlais, 2003, 43.

I agree only with certain reservations with the theory of embodiment of action proposed by Bruun and Langlais. As we cannot intentionally relate to the neuronal states and the movements of singular muscle cells, it is impossible to speak about action at the sub-personal level. Here we speak of causes and effects. And it is not clear how we can reconcile these two radically different levels. Here I want to repeat the arguments cited when I first used the distinction between the levels.

How can intentions be realized by non-intentional processes? As the neuronal states are constitutional for fulfillment of actions intended at the personal level, just as intersubjective things (language, culture, etc.) are required for the individual level, it seems that we need to solve this problem. Perhaps, this problem demands reconsideration of the conceptualizations regarding agency and embodiment. Nevertheless I consider the main idea of enactment very important and fruitful: cognition is related and depends upon action. This idea develops the Merleau-Pontean notion of unity of the subjective and the objective in a human body. What Merleau-Ponty stated, enactivists strive to explain and describe in detail. Thus, I will consider action as an indispensable part of cognition.

Moreover, some authors define agency in terms of phenomenological being-in-the-world. For example, Collins develops Heidegger's idea of human agency as a readiness to cope with the world and combines it with the Wittgensteinian idea of form of life, thus bringing cognitive action to the context of human praxis. Therefore, he relates knowledge and action to each other, claiming that knowing things and doing things are not separable.¹⁴⁹ Being-in-the-world includes a social and cultural context of action. "Agency refers not to the intentions people have in doing things but to their capability of doing those things in the first place".¹⁵⁰ These capabilities include social as well as bodily affordances. Thus, Giddens' account includes society as an important constitutive condition of human agency.

Sociological accounts of action add an intersubjective dimension to the investigation of action. From the perspective of social constructionism, it is the society and habitualization that determine which actions humans take and how they make sense of these actions. Sociologist Wolfgang Hofkirchner introduces the idea of social structures providing bottom-up and top-down causation in human actions:

In so far as the structures do not cause directly, and therefore cannot determine completely, whether or not these options will be realized, for the actions are mediated by the individual actors, dominance cannot control the outcome, either. The structures are inscribed in the individual actors by an endless process of socialization and enculturation, but the engrams which are produced in the individuals serve as informational tools for the anticipation and

¹⁴⁹ Collins, 1990.

¹⁵⁰ Giddens, 1986, 9.

construction of new actions which may or may not reproduce the structures. Either way, interaction reflects on the conditions of its own emergence and may consciously be directed at the structures to maintain or alter them. Since in their recursive actions the actors refer to the structures, these structures play the dominant role in this relation of bottom-up and top-down causation in this sense only. Nevertheless none of the relations in this causal cycle leads to plain results. Each influence has consequences which because of the inherent indeterminacy cannot be foreseen. By this, and only by this, qualitative change is possible.¹⁵¹

Thus, in the social dimension of cognition the same two-level structure can be seen, as in individual human action, with the same problems of intention and causation. But if for individual cognition the distinct levels are personal and sub-personal, for social cognition we can distinguish between personal and super-personal levels. As well as in individual cognition, we can see that there are processes that constitute cognition, but are nevertheless inaccessible intentionally and should be described in different terms.

Thus, I argue that in accounting for cognition we have to include processes taking place in society. Here the super-personal level is necessary for the cognitive action to take place. This level is responsible for the language and culture an individual lives within. The cultural and social processes influence the way humans cognize and act. But they cannot be accessed intentionally, just as with the sub-personal level in embodied cognition. Thus, I propose to add the super-personal (social) level to the personal and sub-personal levels of cognition, distinguished by Bruun and Langlais.

4.3 Action in perception

The next important property of cognition I am going to investigate is the role of action in perception. It can be formulated in brief this way: our perception depends upon the actions we take. This idea is even more distant from the Cartesian notion of subject and challenges the notion of perception as a representation. Here the work by Alva Noë is to be considered. He belongs to the camp of externalists, who made one of the greatest challenges to the traditional concept of the cognizing subject. This trend in philosophy of mind proposes that neither meanings nor experiences are merely in the head. Alva Noë, like phenomenologists considered above, uses the data of cognitive science and psychology to show that what we perceive depends on the outer world and our actions upon it.

Alva Noë proposes to treat perception as action. His argument is intended to disprove some ideas in orthodox cognitive science. He attacks the idea that perception is mind representation of the world, and that investigation of

¹⁵¹ Hofkirchner, 2007, 476.

these representations neglects body and its actions. Experience, according to Noë, is not determined simply by neuronal states that are activated by sensory input. His main idea is that “perception depends on the possession and exercise of a certain kind of practical knowledge”.¹⁵² He challenges the ‘consciousness-is-in-the-head’ dogma and the belief that the brain is enough for experience and behavior. This is how he puts his idea:

Experience isn’t something that happens in us. It is something we do; it is a temporally extended process of skillful probing. The world makes itself available to our reach. The experience comprises mind and world. Experience has content only thanks to the established dynamics of interaction between perceiver and world.¹⁵³

He uses multiple examples from psychology and phenomenological observation to show that in order to form a perceptual experience we need to act upon the world. His examples mostly concern vision, as visual experiences are usually believed to be pure representations or even reflections of the world. Much attention is paid to perceptual constancy – one of the phenomenologists’ traditional objections to the representational view. This problem was brought to investigation by Merleau-Ponty. It deals with the difference between the objective properties and subjective perception. Alva Noë describes this problem, taking into account the perceptual constancy in human motion as well:

In general, changes in ambient light produce changes in the appearance of colored objects. The apparent color of a car in the fluorescent light of the garage is strikingly different from its apparent color in bright daylight. As clouds move to block the sun, and as the day progresses, the car perceptibly changes its color appearance. The way a thing looks with respect to color depends on the character of the illuminating light, and it varies as the character of lighting changes.

The apparent color of an object also varies as the perceiver moves in relation to the object, even when the conditions of illumination, and when the object’s position relative to a light source, do not change. For example, the specular highlights on the surface of a clean, new automobile vary as viewing geometry varies. Specular highlights are frequently the color of the incident light itself, reflecting white in the sunshine, and also the colors of, for example, street lights. As you move in relation to the car, or as it moves in relation to you, the apparent color of the car’s surface may visibly change.¹⁵⁴

Perceptual constancy concerns color, shape and distance of the objects we experience. It poses a problem for the investigation of perception, as it turns out that we perceive things not as they are, but as they are assumed to be.

¹⁵² Noë, 2004, 33.

¹⁵³ Noë, 2004, 216.

¹⁵⁴ Noë, 2004, 125.

We somehow take into account various conditions under which the object is perceived and identify the object despite changes of condition. Noë proposes enactedness as a solution to this problem. He claims that it is our skillful action which allows us to perceive unevenly colored objects as if they had even color. Noë shows that in order to perceive we have to *learn* the relevant patterns of sensorimotor profile:

To see the color of an object — to experience which color it has — is to discover its visual potential or color aspect profile; it is to grasp how its appearance changes or would change as color-critical conditions change. To experience something as red, then, is to experience not merely how it looks here and now, but how it would look as color-critical conditions vary. Only a perceiver with an understanding of these laws of transformation — who grasps the color aspect profile — can experience a determinate color. To experience a color you must grasp its color aspect profile, that is, its sensorimotor profile.¹⁵⁵

Thus, it is our ability to learn how the things change under various conditions that allows us to perceive the color as constant. So it is not only stimuli that determine what and how we perceive, but actual dynamic coping with environment. Noë adds some examples of human ability to cope with distortions in the visual field. One of the most striking examples of such ability is the experiment with reverse goggles, which change left and right. A person with such goggles manages to perceptually adapt to left and right reversal and behave normally. Noë uses this experiment to show that it is sensorimotor understanding, which is crucial for perception, not the factual positioning of stimuli to the left or to the right of a person. As he states, “when you put on inverting lenses, you experience not an inversion of content, but a disruption or disorganization of content”. Hence, “perceptual adaptation to inverting goggles is, therefore, in the first instance, a process whereby sensorimotor understanding, and with it perceptual content, is restored”.¹⁵⁶

Noë’s account is ingenious and persuasive. The possible objection to the way he puts his account is the lack of attention to intersubjectivity, as Gallagher points out.¹⁵⁷ It is quite natural to ask: why do we learn to perceive the world the way we do, given that we in fact learn to perceive? Why do we distinguish these and not those objects and properties? The answers might be given if we take intersubjectivity into account. Gallagher supposes that we learn from others what to look for and how to manipulate and understand things. He suggests that these intersubjective processes shape the way that we perceive the world. I suppose that additionally we have to consider the role of language in perception, as language is one of the main means of human intersubjective relations and learning. The fact that language decisively

¹⁵⁵ Noë, 2004, 132.

¹⁵⁶ Noë, 2004, 91.

¹⁵⁷ Gallagher, 2008, 175.

contributes to perception and action is almost completely neglected by Noë, but is considered by other researchers, for instance, in the motor theory of language¹⁵⁸ and various theories approaching language as a cognitive tool.¹⁵⁹ Indispensability of language in action (both personal and sub-personal) is also stated by many scholars: Vygotsky shows that usage of language helps the child in learning,¹⁶⁰ Ian Hacking develops Anscombe's idea of action under description, where the array of linguistic descriptions of actions available in a society determines the possible actions a human takes.¹⁶¹ We will return to this question in chapter 9, dedicated to language in cognition.

Noë's idea makes the picture of human embodiment and enactment in perception clear and detailed. At the same time, it highlights the limitations of human perception: our body and the repertoire of our actions are limited, thus limiting possible cognitive experiences and actions we might take. Now we see that perception depends on the skilled, deliberate and involuntary actions of humans, which we have to take into account.

This is correct even when it comes to seemingly "pure" perceptions as vision and hearing. The world as perceived is centered on a subject and *what we perceive depends on what we do* (and the other way around). Generally speaking, perception is a part of our coping with the world. Accepting the enacted nature of cognition, we have to attribute to perception all the properties we have ascribed to action. Perception is also embodied, and culturally and environmentally dependent. What we can possibly do, in turn, depends upon our bodily, environmental, instrumental and cultural affordances. In the next part of this chapter I will consider these affordances and their limitations.

4.4 Embedded, extended and situated cognition

Phenomenologists present the role of the environment in cognition as constitutional. This means that environmental issues are crucial for a description of cognition and every account of cognition must include them. Cognition extends into the environment in the sense that we exploit certain aspects of the environment to help us think and make decisions. Shaun Gallagher proposes the example of the surgeon to show how this works:

When a surgeon enters the operating room, the room itself and the equipment in the room, and the way it is all set up, assist the cognitive processes that are involved in doing the surgery. The way the instruments are laid out, their order and position on the table, allow the surgeon to concentrate more on what

¹⁵⁸ Allott, 1989.

¹⁵⁹ Mirolli and Parisi, 2009.

¹⁶⁰ Vygotsky, 1962, 1978.

¹⁶¹ Hacking, 1995, 235.

she is doing than on trying to think about what the next step in the procedure is. These environmental arrangements allow the surgeon to proceed in an expert and intuitive fashion ... without having to stop to reflect on precisely what the next step is. In this sense, expertise, and the cognitive and perceptual know-how of the surgeon are constituted in part by the environment that she works in. The surgeon is better able to perceive precisely what needs to be done, because the room and the instruments are set out in specific arrangements.¹⁶²

Thus, the world around us and the instruments we use are also an indispensable part of the cognitive situation. Human cognition relies upon the things external to us. They are not just helpful, but constitutional for our cognitive activity. This constitutional role of instruments and environment is emphasized in the following example of an artist:

the artist first sketches and then perceptually, not merely imaginatively, reencounters visual forms, which she can then inspect, tweak, and re-sketch so as to create a final product that supports a densely multilayered set of structural interpretations... The sketch pad is not just a convenience for the artist, nor simply a kind of external memory or durable medium for the storage of fully formed ideas. Instead, the iterated process of externalizing and re-perceiving turns out to be integral to the process of artistic cognition itself.¹⁶³

But indispensability of environment makes it problematic to define the boundaries of a system. As we are a part of nature and society, involved in a wide range of constitutional interactions with the world around, phenomenologists raise the question what can be considered as environment at all:

Where, however, can I locate 'the' environment? Where is 'outside' in this case? Is it the landscape that surrounds me where I stand? Is it the world outside my window? ... The air I breathe? The food I eat? Yet the food metabolizes to become my body, the air swells my lungs and enters my bloodstream.¹⁶⁴

This interconnectedness makes it difficult to draw a line between a human and the environment he or she lives in. Environmental issues contribute to the process of cognition almost as much as the body does. Although taking it into account on the one hand leads to more accuracy of description, on the other hand it becomes harder and harder to keep the very distinction between subjective and objective in accounts of cognition. More and more features formerly belonging to the domain of the objective became a part of the cognizing subject. Describing the subject as embodied, and cognition as embedded and enacted, how can we draw the line between the subjective and ob-

¹⁶² Gallagher, 167.

¹⁶³ Clark, 2003, 77.

¹⁶⁴ Berleant, 1992, 4.

jective here? Phenomenologists state that the environment should be included in the account of cognition, but they, as Berleant quoted above, admit that it is not easy to draw the line between the environment and the agent and clearly identify the boundaries.¹⁶⁵ Thus, the extended view challenges the traditional picture of cognition and demands some new ways of accounting for cognition.

In fact, the problem here is not about dividing the subjective and the objective anymore. We need some conceptual demarcation that would clarify the parts and their relations in the cognitive situation. So we need some outer boundaries of the cognitive situation to demarcate cognitive from non-cognitive. And some inner boundaries to distinguish the instances whose interrelation results in cognition. Clark and Chalmers propose the following view upon what to consider cognitively relevant or cognitively irrelevant on the basis of the example of Otto, considered in 4.1. They put forward four reasons why we should count external things constitutive for cognition:

First, the notebook is a constant in Otto's life—in cases where the information in the notebook would be relevant, he will rarely take action without consulting it. Second, the information in the notebook is directly available without difficulty. Third, upon retrieving information from the notebook he automatically endorses it. Fourth, the information in the notebook has been consciously endorsed at some point in the past, and indeed is there as a consequence of this endorsement.¹⁶⁶

Thus, it is constant presence, immediate availability, automatic endorsement, and past-endorsement that allow us to deem something external as cognitive. Cognitive scientist Robert Rupert criticizes conceptual demarcation proposed by proponents of extended mind, as they lead to serious problems regarding our notion of beliefs, consciousness, etc.¹⁶⁷ He claims that if we change Otto's notebook with a telephone it would have the following consequences:

[T]he first three criteria imply that virtually every adult, Otto included, with access to a telephone and directory service has true beliefs about the phone numbers of everyone whose number is listed. The directory assistance operator is a constant in Otto's life, easily reached; when the information would be relevant, it guides Otto's behavior; and Otto automatically endorses whatever the operator tells him about phone numbers. It is absurd, however, to say that Otto has beliefs about all of the phone numbers available to him through directory assistance (i.e., beliefs of the form, "John Doe's phone number is ###-####"), so long as he remembers how to dial up the operator. To say he does would be to depart radically from the ordinary use of "belief."¹⁶⁸

¹⁶⁵ Bruun and Langlais, 2003, 38.

¹⁶⁶ Clark, Chalmers, 1998, 17.

¹⁶⁷ Rupert, 2009, 27–29.

¹⁶⁸ Rupert, 2009, 27.

Thus, Rupert claims that in order to avoid these problematic conclusions we need to find another principle of demarcation to distinguish what is cognitively relevant and what is not.¹⁶⁹ Rupert proposes his criteria of demarcation, based upon the presupposition of “the existence of a persisting, relatively unified, and organismically bounded cognitive system”.¹⁷⁰ But as this view is rooted in the dualistic, internal-external distinction, it misses the core and the benefits of extended approach.

Nevertheless, his critique reveals an important point: the old cognitive science’s concepts and approach in terms of subjective-objective, internal-external, do not fit the externalists’ data, and we need either to reject the data or to propose some new vision and new concepts to deal with it. So the investigation of cognition requires finding some criteria for demarcation, both of the outer boundaries of the cognitive situation and of the parts of it. Thus, we have to look for some other source of conceptualization.

4.5 Summary

In this chapter we have considered phenomenologically oriented accounts in regard to the way human cognition takes place. These accounts criticize certain claims and theories in cognitive science. Mostly they criticize the claims based on Kantian presuppositions and those accounting for cognition in terms of representation and computation. Phenomenologically oriented researchers argue that environment, action, instruments and body are constitutional for the cognitive situation and should be incorporated into the description of the latter. Thus, they expand the focus of cognitive science and replace ‘inside-of-the-head’ explanations with embodied and enacted ones.

But this does not mean that we should reject all the accounts of cognitive science. On the contrary, as cognitive science has its precise focus on human mind-brain functioning, especially at the sub-personal level, it is the accounts of cognitive science we have to use for investigation of embodied limitations of cognition. As we have discovered, phenomenology emphasizes that the body is a central means of cognition. Consequently, we may now ask: *What are the properties of the body as a means of cognition? What are the parameters of its faculties affording the cognition?* Phenomenological accounts have brought my investigation to the point where we have to consider body and brain from a physical and functional perspective. And this perspective is provided by cognitive science, which aims at discovering functioning and parameters of the brain.

¹⁶⁹ Rupert, 2009, 15.

¹⁷⁰ Rupert, 2009, 38.

5 Findings of cognitive science

Thus, from this point I am going to turn to other accounts of cognition, nevertheless keeping the phenomenological descriptions in sight. Here I am going to resort to the accounts of cognitive science. Approaching the issue of environment and embedded cognition I want to recall again an important distinction that was made earlier. We have to make a clear distinction between the first order world, not yet accessed and conceptualized, and a second order world, which we cope with in our embodied, embedded, extended and enacted cognition. It is acted upon, grasped by our senses, and mapped to our concepts.

Here we can also recall the notion of *Umwelt* – an effective environment an organism lives in, perceives and responds to. As the world tends to be perceived differently depending on the actions we take upon it, I believe that we have to keep a conceptual distinction between the first order world and the world acted upon. Moreover, the changes of the structure of action alter the character of the response from the world, as in the experiments with electrons that can behave as wave or a particle depending upon the action taken. Thus, describing the structure of the world – for example, considering scientific accounts – we have to always keep in mind which actions were taken upon the world.

I make a distinction between these two kinds of worlds, because our instruments such as microscope, telescope, etc., have shown that there are depths in the world that we cannot reach with our natural senses not magnified with some instruments. The size of the conceptualized world, which we act upon, is less than of the first order world, as the existence of multiple successful conceptual schemes shows. Moreover, the second order world consists of what we are capable of perceiving via our cognitive facilities. Even when we use various instruments such as the aforementioned microscopes and telescopes, we still have to read their output by ourselves, trying to understand what it is we are seeing.

These new actions that we can perform with our new instruments show us the infinity of possible ways to perceive the world, and consequently the infinity of the world as it is. In our action we may constantly expand our second order world, as the first order world allows multiple actions and conceptualizations. Embodied and embedded action not only allows us to get some response from the world, it also involves the parts of the world in the process of functioning of the organism, as we have seen in the example of

Otto, considered in chapter 4; and finally, it changes the world (*Umwelt*). But here comes the first question: if the world is revealed to us through our actions, what are the limits of these actions? Do our actions allow us to reveal anything, or do they have some structural restrictions, delimiting our cognition?

Here the accounts and data of cognitive science can provide an answer as they allow comparing the results of first-person observations with the data of third-person observations, experiments upon humans and groups of humans, and results of application of various instruments.

5.1 Cognitive science and physics on the limits of cognition

Here I am going to make a revision of the limits of cognition, somewhat similar to that performed by Kant. But unlike Kant, I am going to base my consideration first of all upon the physical properties of us humans. As I have stated in 3.1, it is our human predicament that we are limited: we are limited in our reasoning and senses. But within this general predicament there are concrete situations of cognition, with which we cope. In these situations we use both senses and reason. And here we can combine senses and reason for our goal to cognize the world.

Therefore, I propose to regard senses, as well as reason, not as a general criterion of reliability, but as an instrument we can use in certain situations. In these situations we can also see both the usefulness and the limitations of our senses and reasoning. So here the limitations of these instruments are to be revealed. I will consider them in relation to two indispensable parts of cognition:

- Limitations of perception
- Limitations of processing

I will take perception as an example of a concrete situation revealing limitations. Perception is a basic act of cognition. Taken in terms of the subjective and the objective, the account of perception should include both the subjective and the objective. As Kelly states, “if I’m having a perceptual experience of an apple, I cannot completely and accurately describe this experience without at least some reference to the very apple I’m having an experience of”.¹⁷¹ That is why perception should be considered from several perspectives in order to reveal both parts.

¹⁷¹ Kelly, 2001, 151.

Thus, the subjective and the objective are interweaved in perception. But as the empirical investigation tends to conceptually separate the subject and the object, I will follow this separation in the current chapter. First of all, we need to account for the world in the act of perception. Then we have to account for the cognizing human. We will see which parts of the world humans are capable of perceiving in a single act of perception. Additionally, we will see the limits of perception: what our senses and cognitive abilities are incapable of conveying to us. Therefore, I am going to bring into consideration the properties of the world identified by the use of instruments and compare them with what our cognitive abilities alone can distinguish. Here I am going to apply the distinction I have stipulated in chapter 2 and recalled above: the first order world, as it is by itself, and the second order world, conceptualized and approached by us humans. The difference was quite important on the conceptual level, and here I am going to uncover the empirical implications of this limited relation to the objective.

5.2 The particularity of scientific accounts

As we are now entering the grounds of natural sciences, let us recall the issues of scientific accounts of the physical world that we have revised in chapter 2. I have rejected a simplified view of the objective as a ‘mind-independent world around us’. Although science strives according to scientific realism to provide pure accounts of the objective, it is still contaminated with subjectivity. This contamination has to do with the action humans take upon the world in order to cognize it. The action taken determines what kind of response humans receive from the object. Thus, here we also have to take into account the enacted nature of cognition. Moreover, the actions that science takes depend on the current scientific conceptual scheme. A scientific picture should not be taken as the first order objective, the descriptions of which are more objective than those of sociology or phenomenology. Science describes a certain accessible angle of the objective. Hence, we have to approach science keeping in mind its range of adequate actions and concepts that it is based upon.

So I will use scientific accounts mainly for their capability to enrich our descriptions. We act and perceive only through bodily affordances, and science complements those basic affordances. Scientific accounts of the world accumulate the results of multiple acts of perception by the use of various instruments. Thus, science provides instruments for extension of our perceptions and reveals the things we are incapable of perceiving due to bodily limitations. Using the terms of phenomenology we might say that science constructs a new environment and instruments, where cognition results from the actions specified by this environment. But phenomenology tells only one part of the story. Another important part concerns the specific

language and conceptual schemes of science. Together with a construction of the environment and taking actions in it science invents new concepts and replaces the whole picture of reality that we approach with a new one, connected to the new concepts and schemes. The scientific manner of reality description is at some points quite different compared to reality description using everyday concepts. That is why it is not easy to merge scientific discoveries with other traditions' descriptions.

Let us take for example the scientific account of color. In everyday experience we see such properties as color. This apple is red and I clearly see it in bright sunshine, just as anyone with appropriate sight would – that is an objective property. But what does this “red color” mean, according to physics? Colors are a property of a specific wavelength of the light perceived by the human eye. Our perception of color, though, is affected by the environment where we perceive it and the illumination. Moreover, there are also some physiological properties that are responsible for environmental adjustment.¹⁷² The light reflected by a red apple has a wavelength of 700-365 nm. That is why we perceive it as red. So according to the scientific approach red color is not a property of the apple itself. It is a property of the light. But the perceived color is a property of apple, light and the environment.

If we try to speak in terms of color at the quantum level, we will inevitably fail. Questions as “What is the color of nucleus?” are senseless. Just as there is no light able to fall on the nucleus, surrounded by electrons, we cannot perceive any light reflected from the nucleus. So does this mean that the nucleus has no color? Is it transparent or black? How can we imagine something without attributing to it some visual property such as color or transparency? Thus, although science is capable of bringing our cognition to the quantum level, we are still bound by our notions originating from the ordinary way we experience the world. It takes lots of time and effort for science to construct new concepts to account for the actions it takes and results it gets from the world.

From a scientific point of view, an apple in a black box has no color at all, just as no light falls on it. Nevertheless, we speak about colors of various things and deem a color as an inherent and objective property of them. But this way of speaking about properties is acceptable only for some approaches to the world, for example in our everyday communication. Here color as a property can be correctly appropriated to objects. From the perspective of science, color is a different issue.

Thus, science, due to its specific actions and concepts, here replaces our ordinary notion with a different picture of reality. We cannot merge this picture into our everyday way of dealing with things, but we can compare the two pictures and the actions they imply. So the main interest in using scientific accounts is to show how human senses and what we perceive in

¹⁷² Lagerspetz, 2010, 165–168.

everyday activities can be extended. This extension allows us to see the limitations of our senses and the things that lay behind our ordinary embodied perception, but which can be accessed by other means.

5.3 Perceptual limitations

We can now turn to identifying the limitations of human cognition on the sub-personal level, and the structural issues emerging on the verge of the personal and the sub-personal levels.

There are considerable physical limitations of our perception. Scientific actions and instruments show the limitations of our perceptual facilities, as they allow performing actions the body does not afford and reaching some new things. For example, the spectrum of colors that the human eye can perceive is not relatively big. It varies from 380 to 740 nm. There are many wavelengths we cannot see at all. Do they have any color? And what is the color of these wavelengths? We cannot conceptualize that as we cannot perceive these wavelengths. Here we can see the difference between our human predicament and limitations within certain situations. Here the instruments allow us to discover new things that we cannot see because of our general predicament. They are approached by other instruments, such as a spectroscope.

Thus, perception of a property such as color is dependent on the capabilities of the human eye. Here we can infer from the theories and the data we receive with the use of the instruments that there must be other colors corresponding to the whole range of wavelengths. But these colors do not have an appearance. So the concept of color cannot be applied here in a natural way. The instruments and theories reveal our perceptual limitations and show the difficulties of mapping scientific data to everyday notions, such as color. Nevertheless, science extends the usage of such notions.

Now I will consider the other kinds of limitations functioning on the sub-personal level. One of the most intriguing features of human cognition, discovered by science, is the contrast between the amount of data perceived by the senses and the data that is afterwards perceived by consciousness. The capacities of human sense organs are much greater than the abilities of consciousness. According to cognitive studies, data perceived by human sense organs is enormous, constantly changing and could not be comprehended in its totality.¹⁷³ For example, the human eye is sensitive enough to perceive a single photon in full darkness. The reaction of the cells of the eye shows that the photon was registered. But the human does not detect or realize this event. Actually, if all the data from our sense organs were directly transmitted to our awareness, we would be drowned in them. We would be unable to

¹⁷³ Schnapf, 1987, 40–47.

act or at least to make sense of all these millions and billions of photons, sounds, etc., which we actually perceive. A huge amount of reality is just trashed or compressed in the process of perception.

This fact shows that there can be no simple mirroring reflection of reality in a human mind. There also can be no “lossless” account of reality: we cannot grasp things in all possible detail. Lots of details must be omitted for the sake of perceiving a whole object – a whole picture, for example. We cannot and do not perceive all the details simultaneously. The process of cognition is more intricate, and is structured in a different and more flexible way, than “mirroring”.

5.4 Cognitive limitations

One of the most striking discoveries of cognitive science in regard to subject and cognition is the extent to which human cognitive abilities are limited. The main features of the subject discovered by empirical sciences are inner structure of cognition and the limitations of perception. Surely, the finite and limited nature of the subject was evident even before the start of the cognitive enterprise. It is the knowledge of the extent and the exact forms of human cognitive limitations for which we have to credit cognitive and other sciences.

But there are other less obvious conditions determining what we actually perceive and – therefore – what we actually cognize. These conditions could be divided into personal cognitive limitations and sub-personal cognitive structures. I will consider both. Cognitive limitations inherent in human mental functioning were discovered quite recently and changed the notion of human cognition. The recent “cognitive revolution” has challenged the assumption that cognitive dysfunction is necessarily due to interference from non-cognitive sources.¹⁷⁴ It is our limited cognitive capacities and “bounded” rationality that make us prone to mistakes.

The most impressive discovery that influenced this line of thinking was made by Miller. In 1956 he published a paper with a remarkable title, “The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information”. In this paper he shows the limitations of the capacity of our short-term memory. Miller has conducted an experiment where the subjects listened to several auditory tones that varied only in pitch. The subject should identify each tone relative to the others she had already heard. Subjects’ capacity for making the tone judgments drastically declined after five or six tones. A similar decline of cognitive abilities was registered for other tasks. Miller concludes that we can hold only from five to nine

¹⁷⁴ Payne and Carroll, 1976, 3.

objects in an operational manner.¹⁷⁵ This finding initiated a new line of discoveries in cognitive science, which led to an overall conclusion that people are “limited information processors” in a technical sense. This, in turn, resulted in a general conclusion that we are “limited”.¹⁷⁶

Payne and Carroll summarize the “limited cognition” line of thinking and make a conclusion, that “just as the psychoanalytic theorists have talked about non-optimal functioning arising from ‘psychic economics’, it is now legitimate to talk about such malfunctioning arising from ‘mental economics’.”¹⁷⁷ According to cognitive science, our brain is highly parsimonious in the usage of resources. In fact it is capable of using quite a few data to produce beliefs, decisions and images of objects.¹⁷⁸ We can see meaningful images in scattered dots or in inkblots.¹⁷⁹ Moreover, it tends to recycle the representations, beliefs and decisions already produced. It tries to maintain homeostasis wherever possible.

The cognitive limitations of humans range from inability to integrate information to systematic biases in estimating probability, as shown in the famous experiment of Tversky and Kahneman. In this experiment people were proposed to imagine as follows: *your country is preparing for an outbreak of a disease which is expected to kill 600 people. You can choose between two vaccination schedules: Program A which will save 200 and Program B which will save all 600 with probability 1/3.*

When the problem is proposed this way, most people choose Program A. However, during the experiment the same people were presented a new scenario: *imagine that your country is preparing for an outbreak of a disease that is expected to kill 600 people. You have the choice between two vaccination schedules: Program C which will allow 400 people to die and Program D which will let no one die with probability 1/3 and all 600 will die with probability 2/3.*

In this case most people choose option D. This is an example of one of cognitive mistakes called loss aversion. These two situations are identical in quantitative terms, but in the second one the decision maker is losing instead of saving lives, thus setting 0 lives lost as the status quo from which losses are measured, making the sure loss of 400 people more loathsome than the probable loss of 600.¹⁸⁰ Cognitive scientists infer from such examples that we

¹⁷⁵ Miller, 1956, 343.

¹⁷⁶ Fitts and Posner, 1967.

¹⁷⁷ Payne and Carroll, 1976, 3–4.

¹⁷⁸ One of the main puzzles for cognitive science is the so-called frame problem, which concerns human ability to make decisions on the basis of a very small range of commitments. “How do I decide what I should take to be relevant when I compute the level of confidence I should invest in a hypothesis or a plan? Any substantive criterion of relevance I employ will inevitably risk omitting something that is, in fact, germane; and one of the things I want my estimate to do (all else equal) is minimize this risk. How on earth am I to arrange that?” (Fodor, 2006, 90).

¹⁷⁹ The Rorschach test is based on this ability: humans see animals, faces, landscapes encoded in the inkblots.

¹⁸⁰ Tversky and Kahneman, 453–458.

are lousy information processors prone to error. But we can make a different conclusion.

Of course, we should be cautious about notions of humans as “limited information processors”. As shown above, humans definitely are not mere information processors. There is much more in human cognition than processing. Thus we can see in this example that human coping with the tasks depends on the overall situation. There are some rules governing our cognition that cannot be explained in a computational manner. Nevertheless it is hard to deny that some cognitive limitations become evident in the experiments, such as those performed by Miller, and should be taken for consideration. Thus, we can observe the experiments while being cautious about accepting the theoretical explanations.

These cognitive mistakes show that human rationality is sometimes quite far from logical machine computations, and thus the general “logical computation” assumption of cognitive science is not quite right. Human rationality is not so logical and rational at some points. Our decision-making is not performed in the manner of logical computations. But at the same time these mistakes reveal the existence of some inner structures guiding human cognition. As humans are prone to the same cognitive mistakes we can hypothesize that here we are seeing not the immediate coping of humans with their environment, but some stable structures in action. Thus, given that we paid attention in the first and second chapters to the mediating structures of human cognition, we may now proceed with further investigations of them on the basis of experiments in cognitive science.

5.5 Guidelines in cognition

Cognitive science has shown that we not only shape our sensory data, but we also lose a lot of it. It is quite evident that our cognitive facilities cannot grasp infinitely many things, as it would require “containers” of infinite storage capacities. The experiments considered above have revealed precise limitations of our cognitive capacities. So because the capabilities of our memory, sight and so on are limited, our perceptual facilities have to shrink the flow of information from the world as it is to fit our “containers”.

The mechanism of this shrinking requires some guidelines that would separate important information from trash. Our sub-personal mechanisms of cognition only select a small amount of data from the array of sensory information using some guidelines. The existence of such guidelines can be seen from phenomenological accounts also. The perceptual constancy discussed above reveals that there is some stability our perceptual faculties tend to keep. Some mechanisms shape our perceptions so that despite the noise and interference we perceive a singular phenomenon: the even color of a car,

or the unchanging shape of a plate. We may suppose that it is our specific cognitive capacities and limitations that demand some guidelines to arrange large arrays of information, as visual information, to cope with them. What is the nature of these guidelines? To find an answer to this question let us proceed with a revision of some other discoveries of cognitive science.

Here I make recourse to the accounts of top-down and bottom-up processes in cognition. The top-down processes are directed by a higher level of sensory processing, such as goals or targets. The bottom-up processes take place without higher level direction in sensory processing. We can see the same distinction between the personal and sub-personal levels of description of cognitive processes Bruun and Langlais propose.¹⁸¹

A good example of bottom-up process I will consider is early vision. Early vision is the process occurring before any semantic interpretation of an image takes place. So early vision concerns motion estimation, object segmentation and detection. Meanwhile, the goal-directed perception or recognition of images presented only partially is an example of top-down processes. It is quite understandable how perception takes place on these levels. What is more interesting is how bottom-up and top-down processes interrelate. The answer to this question could explain the particularities of relations between our personal and sub-personal cognitive faculties. Experiments show that these processes are not isolated. As Julesz writes:

[T]here are many perceptual phenomena that depend on high-level processes, including semantic memory. A well-known example in cognition is the word-superiority effect, which denotes the fact that the recognition of certain letters is superior when contained in an English word than when contained in a non-sense word.¹⁸²

Some researchers argue that the top-down processes influence early vision, thus influencing even the most basic sub-personal processes.¹⁸³ For example, attention can modulate sensitivity to local stimuli in early vision. Moreover, cognitivists suggest that experience tends to form some expectations in our perception. There is a sort of synchronization between our perceptions and our concepts. This idea is very important, as it connects the sub-personal, intentionally inaccessible levels of cognition with the personal level, where meaning, intention and consciousness emerge.

Figure 1 depicts the interrelation of bottom-up stimuli from the early visual stages and top-down signals due to expectations formulated by the semantic memory. The neurons whose visual field corresponds to different regions of the same object, which have in general different illumination and hence different inputs, need to synchronize in order to level these differ-

¹⁸¹ Bruun and Langlais, 2003, 37.

¹⁸² Julesz, 1991, 118.

¹⁸³ Freeman et al. 2003, 985.

ences. Here, the focal attention assures the matching (resonance) between the two streams.¹⁸⁴

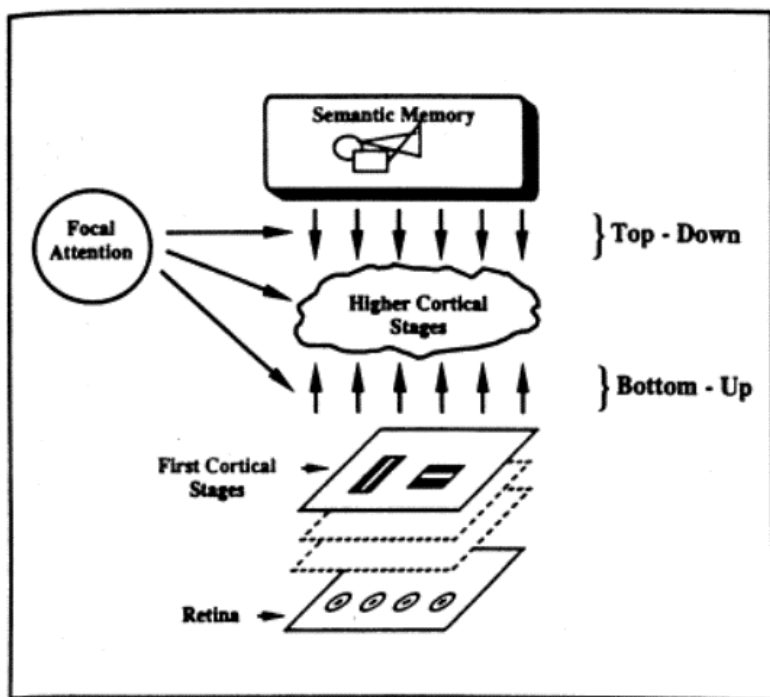


Fig. 1

In order to solve this problem Arecci proposes to consider each neuron “as a nonlinear threshold dynamical system yielding as output a spike train whose frequency increases with the above-threshold stimulation”.¹⁸⁵ Arecci strives to connect the sub-personal (neuronal) and personal (conscious, semantic) levels in cognition, proposing to consider both as parts of a dynamical system. He considers series of signals: top-down, originating from the high order structures of semantic memory, available for conscious manipulation; and bottom-up signals, originating from retina and neural structures. As a solution he proposes the idea of natural semiotics. He is basing this on the cognitive scientists’ idea that our perceptual faculties are not *programmed* to contain procedural and declarative knowledge, but *trained* to do specific things in response to the demands of the environment.¹⁸⁶ The idea of natural semiotics implies that it is personal meaningfulness that guides this training.

Arecci supports his hypothesis with examples from experimenting on vision performed by Singer and Gray.¹⁸⁷ In fact, these experiments and the

¹⁸⁴ The picture is from Julesz, 1991.

¹⁸⁵ Arecci, 2002.

¹⁸⁶ Churchland and Sejnowski, 1992, 96–102.

¹⁸⁷ Singer and Gray, 1995, 555.

problem underlying them are quite close to the problem of perceptual constancy considered by phenomenologists. On the level investigated by cognitive science this problem can be formulated thus: *How do neurons readjust their sensitivity threshold so that they neglect differences in illumination, etc., and produce a perceptual image of a whole object?*

In his approach the connection between two levels consists of a “matching mechanism which controls the interaction of bottom-up and top-down signals until they reach a stable situation. The mechanism is the sequence of perception – action loops whereby we slowly familiarize with an external environment”.¹⁸⁸ Thus in some sense our low-level cognitive apparatus is trained to perceive what is meaningful for us.

This approach is one of the possible solutions of the problem of perception. But the investigations standing behind this problem are more important for us. As we can see in the examples of Julesz and the research of Churchland, meaning plays a role in perception, even on the low-level functioning of it. We perceive only some minor part of the world, and meaning guides our perception. Hence we can suppose that *the guidelines shaping our cognition are related to semantics*.

In fact, it is hard to deny that there are some structural properties affecting our cognition. The existence of such things as cognitive illusions proves that our cognition is not a mere or pure coping with reality present at hand. There are some structures evident in persistent cognitive mistakes and illusions. I am not going to question the nature of these structures – whether it has to do with the brain or culture, etc. Let us just remember the fact that there are some semantic structures that can relate to both personal and sub-personal cognitive functioning.

We now can conclude that we have limitations based on the capacities of our “hardware” or sub-personal cognitive faculties. These simply show the borders of our perception. But we have some other limitations, and these have to do with our “software” cognitive faculties. Here I mean the aforementioned guidelines, in accordance with which we carve reality, selecting some objects in it and trashing the rest as meaningless, or having no concepts to be pointed at or described. We can suppose that there are many entities and properties in the world that simply do not have proper guidelines in our mind to be perceived. We look through them as if they were transparent.

Evolutionists suggest that if we do not perceive something, it is irrelevant for our survival. This follows from the standpoint of evolutionary psychology: cognitive structure, like physiological structure, has been designed by natural selection to serve survival and reproduction.¹⁸⁹ Our mind is shaped by evolution to perceive sensory information that is necessary for survival. This argument leads evolutionists to look for survival relevance of all kinds of

¹⁸⁸ Arecchi, 2002.

¹⁸⁹ Tooby and Cosmides 2005, 18.

things humans are capable of perceiving, including beauty and music.¹⁹⁰ But following this line of thinking, we can say that atoms are evolutionarily irrelevant, as the discovery of them does not promote our survival and we have no faculties to perceive them. Nevertheless, atoms, just as many other things discovered by humans, are necessary for our knowledge about the world. So I think it is not justified to consider as irrelevant all the things we overlook due to our semantic guidelines.

5.6 Construction and filling of the gaps

Additional to “cutting-off” functions and structures of cognition there are “adding-to” functions in our cognitive apparatus. These in fact construct objects and fill in perceptual gaps. Perceptual gaps appear both on the sub-personal and personal levels of cognition. The problem is that we do not in fact perceive that there are gaps in our perception. On the contrary, we perceive the world and objects in it as whole, despite the fact that we do not have perceptual access to most of its parts.

Most of the things the presence of which we perceive are, strictly speaking, not perceived via sensual faculties. We do not actually perceive the endless Universe using our five senses, but we have an impression that we live in an endless Universe. Most of the second order world is constructed by some cognitive functions, including our imagination and memory. The problem of perceptual incompleteness or, as Alva Noë names it, perceptual presence of the things for us, is usually expressed in phenomenological terms. This is how Alva Noë puts it:

Consider, as an example, a perceptual experience such as that you might enjoy if you were to hold a bottle in your hands with eyes closed. You have a sense of the presence of a whole bottle, even though you only make contact with the bottle at a few isolated points. Can we explain how your experience in this way outstrips what is actually given, or must we concede that your sense of the bottle as a whole is a kind of confabulation?

Or consider a different case: A cat sits motionless on the far side of a picket fence. You have a sense of the presence of a cat even though, strictly speaking, you only see those parts of the cat that show through the fence. How is it that we can in this way enjoy a perceptual experience as of the whole cat?¹⁹¹

As Gallagher states, perceptual incompleteness includes also the cases of visual illusions, the visual experience of voluminousness and color constancy, as well as the fact that we seem to experience the environment as fully detailed even though we do not attend to or literally see the details. Our per-

¹⁹⁰ Terhardt 1991, 21.

¹⁹¹ Noë 2004, 60.

ception allows us to have perceptual access to the things that are only partially in sight, or have been there recently.

Alva Noë proposes a possible approach to understanding how we build whole images and perceptions from parts we actually are disposed to. He supposes that it is the accessibility of things that makes us perceive things as complete. He argues that our perceptual sense of the wholeness of an object, for example, a cat, consists in our implicit understanding or expectation that movements of our body to left or right will bring further bits of the cat into view.¹⁹² But Noë thinks this argument can be objected to: it is not clear how the relation to the hidden parts of a cat can be visual. Thus, he proposes to conceive of perceptual content as virtual: the hidden properties of objects are perceived as available, rather than represented.¹⁹³ But this idea, in turn, can be objected to, e.g. by Gallagher, that we perceive an object as a unity across a set of temporarily accessed profiles.

When I perceive a tomato... I am not perceiving something which at that very moment possesses one actual profile, and which previously possessed and will subsequently possess various others. The side that is perceptually present is not one side with respect to a past or future side, but is determined through its reference to a present set of co-existing profiles.¹⁹⁴

Gallagher claims that we have to take into account the transcendence of the object in a sense that, at any given moment, an object possesses a plurality of co-existing profiles. He refers to the Husserlian account of this problem: “if the absent profiles cannot be correlated with my possible but non-actualized perceptions, then the absent profiles may be correlated with the possible perceptions that others could currently have”.¹⁹⁵ Husserl has introduced intersubjectivity as a possible solution for perceptual incompleteness. Moreover, in his account intersubjectivity plays a crucial role in human perception.

Thus everything objective that stands before me in experience and primarily in perception has an apperceptive horizon of possible experiences, my own and those of others. Ontologically speaking, every appearance that I have is from the very beginning a part of an open endless, but not explicitly realized totality of possible appearances of the same, and the subjectivity belonging to this appearance is open intersubjectivity.¹⁹⁶

Gallagher’s critique is aimed at one of the flaws in contemporary phenomenology: lack of attention to intersubjectivity. Thus, in my further investiga-

¹⁹² Noë 2004, 63.

¹⁹³ Noë 2004, 67.

¹⁹⁴ Gallagher 2008, 172.

¹⁹⁵ Gallagher 2008, 172.

¹⁹⁶ Husserl, 1973, 289.

tion I am going to take this critique into account and approach the problem of perceptual incompleteness in the light of intersubjectivity.

In fact, the cognitive strategy of adding something to build the whole from the pieces, in combination with the other strategy of cutting off a big part of perceptual information seems to point at something important. These two strategies working hand in hand suggest that there must be some mechanism orchestrating both the cutting-off and adding-to, resulting in focused cognition with sharp distinctions between objects. Here we may ask: what is this gravity center that draws and shapes our attention and perception? As we have seen, meaningfulness is characteristic of this mechanism. Moreover, there is a great body of evidence showing that it is language that orchestrates our cognition and perception. But this hypothesis and evidence supporting it are to be studied in the part dedicated to language in cognition.

5.7 Intersubjectivity and limitations

We could suggest that the limitations imposed on individual humans could be at least partly transcended in social interactions. What is not available for me due to my limitations in experience, could be cognized by my neighbor and then transferred to me in communication. If I cannot study mathematics due to lack of time, I could ask my neighbor to tell me the truths of mathematics.

Unfortunately, there are limitations impeding this kind of cognition. The intersubjective or social limitations are rooted in the diversity of humans: we have different cognitive capacities, cultural and situational environments, that influence our ability to cognize and transfer information. Mathematical truths are not comprehensible for persons without necessary training in mathematics. Therefore, there is no simple way to transfer knowledge and expand cognition simply by adding more agents.

Additionally, the transmission of knowledge is impeded by fraud, lies, conspiracy, etc. We do not accept everything that others claim. But we have to choose whose and which statements to take into account. So society does not function as cohesively as a neuron network. Instead, in society we see the multiplicity of social groups holding to various opposing ideas, claiming to have the real knowledge and truth. As Merleau-Ponty claims, humanity is not

a community of thinkers, each of whom is guaranteed... to be able to reach agreement with others because all participate in the same thinking essence. Nor, of course, is it a single Being in which the multiplicity of individuals are dissolved and into which these individuals are destined to be reabsorbed.¹⁹⁷

¹⁹⁷ Merleau-Ponty, [1948] 2004, 87.

This condition leads to both diversity of truth claims and dependence of each human's beliefs upon those of other people. "In this ambiguous position, which has been forced on us because we have a body and a history (both personally and collectively), we can never know complete rest."¹⁹⁸ Thus diversity and conflicts impose limitations on social cognition. These conditions can be seen as favorable for progress, but they prevent knowledge from being universal.

Here I want to clarify the empirical mechanisms of cognition as they result from the actions of many individual subjects and their communication. Let us recall Giddens' idea of recursive actions, where agents reproduce the conditions that make these activities possible,¹⁹⁹ and Hofkirchner's account of social causation with its explication of two levels involved in actions.²⁰⁰ On the social or super-personal level we can speak only in terms of causation, not intention. Nevertheless, intentional personal actions result in social structures, which in turn influence personal actions. The resulting culture and language are the products of the actions of singular individuals, in comparison with the resulting "big picture" of knowledge and language, comprised of the totality of individual actions. There is a tension between my personal action, actions of other people and all possible actions.

Every human being instantiates some part of this array of present and possible actions. Communication provides some agglutination and reformulation of instances of cognitive action. In this process new utterances or instances of action emerge and start circulating. The crucial point of culture, knowledge or experience is that they do not have one subject able to grasp and manipulate culture or knowledge as a whole. Speaking of intentionality on the super-personal level is complicated. Knowledge on a social level is a compound of various humans having some parts of it and attempting to figure out something of the perspective available to them. As a single human is unable to contain the whole body of information and as any given human is unable to have connections to all other humans, knowledge is dispersed in society in a special way. This is how Collins puts the idea of relation between individual and social action and knowledge:

The locus of knowledge appears to be not in the individual but the social group; what we are as individuals is but a symptom of the groups in which the irreducible quantum of knowledge is located.²⁰¹

Collins works from the idea that knowing things and doing things are not separable, which means that social groups are shaping knowledge and action. People are usually forming groups around some similar rule-governed

¹⁹⁸ Merleau-Ponty, [1948] 2004, 88.

¹⁹⁹ Giddens, 1984, 2.

²⁰⁰ Hofkirchner 2007, 475–476.

²⁰¹ Collins, 1990, 6.

actions and discourse. Participation in these groups amplifies and corroborates the legitimacy of these actions and the discourse, as we have seen in the previous chapter's revision of sociological claims.²⁰²

This compound structure of knowledge and discourse has serious implications. For example, as *there is no subject capable of having all accessible knowledge, there can be no universal knowledge*. We will always have some parts with no possibility to arrange these parts in an absolutely congruent way, as we cannot perceive and justify all the pieces of which our knowledge consists. This means that there will always be varieties of culture, knowledge, etc. As long as humans produce different structures in the process of habitualization of their actions, this diversity persists. The existence of intersubjective communication produces the super-personal level of cognition, which is nevertheless accessed by individual humans. Thus, the limitations of individuals influence the societal structure and the way knowledge is shared.

Hence let us make an overview of the limitations of the human, so we can neatly place the discoveries of cognitive science into the whole picture of the cognitive situation that we have started to render with the help of phenomenology. It is fairly trivial to distinguish the basic conditions of cognizing humans. A human being is finite; he or she has a certain position in time and space. Additionally, humans are conditioned by cultures they are raised in. Every human being has a certain perspective. This outlook is determined by personal history, character, intellectual capacities, languages the person can speak, bodily particularities, actions, environment, instruments, etc. – all the things that could be included in the phenomenological notions of environment and embodiment. Thus, every subject has a compound limited cognitive system with unique characteristics. As each human instantiates a unique instance of the cognitive system, he or she perceives and cognizes world from a certain angle. This angle has spatio-temporal properties and is constituted by the structure and size of the human body, the capacities of human senses, the actions the human takes upon the environment, the instruments used. This condition of humans is very important: it is a prerequisite for the diversity of beliefs and truth claims. As the angles of our cognition are limited by our conditions and lifespan, we cannot access reality from all possible angles.

5.8 Cognitive limitations and strategies: conclusion

Limitations of human cognitive capacities show that the subject-object relation is molded and compound. Instead of one absolute transcendental subject there are millions of limited finite subjects, each having unique bodily prop-

²⁰² Giddens 1984, Berger and Luckmann, 1966.

erties, cultural and natural environments, and taking actions in a particular manner. Each subject has his or her unique and limited perspective and abilities. Cognitive scientists explain these limitations in a Kantian manner: they claim that there are certain structures in the human mind that process information this way. I propose to complement this interpretation with the discoveries of phenomenology: the embodied, enacted, embedded and extended nature of our cognition imposes additional conditions and limitations.

Body and environment constitute the structures within and with the help of which cognition takes place, as well as the boundaries of cognition. As we have one certain body, its properties make a condition of our cognition. The choices of actions and environment we make at any given moment both limit and enable our cognition. As there are enormous possibilities of actions, situations and environments, our choice of some of them cuts off all other possibilities, thus limiting us. But at the same time the chosen actions enable our cognition. When I choose to learn mathematics, this eventually will make me capable of knowing the truths of math. But making this choice I cut off the other possible fields of knowledge I could study: as I am limited, I am capable of knowing only one field in depth.

The embodied, enacted, embedded, and extended approach makes us shift the perspective from intersubjective to individual. This has some disadvantages, but it makes the subjective-objective unity a main focus of research. Thus, this approach gives us tools to deal with the problems which dualism cannot solve. Moreover, this change of perspective allows us to account for the core of the problem of diversity of truth claims. To account for diversity we need to move from issues of the intersubjective to those of the individual.

As we have seen, there are differences in cognition taking place on personal, sub-personal and super-personal levels. Although sub-personal and super-personal levels play a constitutive role in human cognition, they nevertheless cannot be intentionally related to. Cognition-related actions taking place on these levels should be described differently. But there are considerable attempts to account for meaningfulness that permeates the level boundaries and causes the functioning on the sub-personal level also.²⁰³ As we have seen in the example of the account of visual perception, meaning is constitutional even for early vision.²⁰⁴

Let us now recall the main ideas of cognitive science and phenomenology considered here. We have seen that perception is a kind of action, as Alva Noë states. There are some regularities in perception that guide it, making us perceive the world and things in it as whole. These guidelines cut off irrelevant stimuli and complete things so that we have clear perception. Moreover, what and how we perceive and cognize is constituted by our body, environment and instruments, as was shown in chapter 4. Thus, if we accept the

²⁰³ Arecci, 2002.

²⁰⁴ Julesz, 1991, 118.

picture of cognition in both cognitive science and phenomenology, we can conclude that human cognition should be considered as *rule-governed actions taking place in and via the environment, instruments, and body*. The environment, instruments and body both enable and limit our cognition. Thus, I have made a short list of the governing factors influencing actions we can take. We can see that there are several features that both enable interaction between human beings and outer world and put limits on this interaction. These are:

- The size and upright posture of the human body.
- The ability to perceive light and sound waves to a limited extent.
- The duration of human life: we exist as sensual beings for a limited time only.
- The capacity of the human mind-brain: it has certain limitations to the amount of data able to be stored and processed.
- The cognitive structure of the human brain, which enables sub-personal cognitive processes.
- Guidelines that cut off and add to our perception so that the world seems whole and complete.

The limitations affect both our perception and processing. We can conclude that there is a significant influence by human cognition on perception of the world. The first order world is wider and deeper than the second order world and *Umwelt* resulting from our cognitive actions. Moreover, there are many possible ways to approach the world in action that lead to different conceptualizations of the objective.

On the social level our cognitive limitations lead to the co-existence of different cultures and knowledge systems. Thus, social cognition exists in the form of a distributed system of limited individuals who communicate with each other on a personal level and relate to social structures.

5.9 Summary

In this chapter I considered the scientific accounts of human cognition. The difference between the first and second order worlds results in an infinite amount of possible aspects of the world that we might detect and address with our actions. The capabilities of the subject are rather scarce, but it has all the infinity of the first order world before him- or herself. It is like an endless ocean where you can put your net at a specific place and always get something caught in it. We can always add more details to our perception, indicating new ways to approach this object in action. This is an instance of *actual* infinity of the world, even if we are speaking of the second order

world only. The actions we may take upon an object determine the array of possible descriptions.

As I have already emphasized in the overview and critique of the scientific approach, what we experience in the world, what we perceive and cognize, *depends first of all upon the actions we take*. The world responds to the questions we ask it in the form of manipulation and observation. As we have seen, there are some important features of our cognition, which make us perceive only some parts of reality. Consequently, it is really important to know what kind of questions we are capable of asking and what kind of answers we are capable of comprehending.

The infinity of possible actions makes the world infinite, but still we are capable of dealing with it, of handling objects empirically and grasping them conceptually. The observations reveal that there are some guidelines that shape our cognition. These guidelines function both on the sub-personal and personal levels. On the sub-personal level the guidelines cut off excessive information and add the non-perceived properties and parts in our perception. They function as patterns leading our cognitive actions, which are necessary for handling of the infinite world with our limited abilities. On the personal level the guidelines allow us to have the connection to infinity and ability to take something out of it and to know it, despite the fact that we have only finite things in a very small scope in our consciousness in every instance.

Thus, here we have encountered a possible candidate for *mediation in cognition*. I propose to consider the nature of the guidelines such as semantic and linguistic. Thus, we now have to move to the next chapter, dedicated to language in cognition.

6 Empirical issues of language

As we have observed the part of cognition related to percepts, now we have to turn to the concepts in their empirical existence. Surprisingly enough, here we find the same features as we observed regarding percepts: embodiment and enactment. As the discoveries of cognitive linguists and neuroscientists have shown, embodiment influences cognition not only on the perceptual level, but extends so far as to shape our language and conceptual systems. At this point we come close to one of the most important problems of human cognition – its relation to language.

The work here is structured in accordance with two possible approaches to language: language as a structured system implemented in humans, and language as a cognitive tool. Both of these approaches are highly relevant for our work. The first originates in analytic philosophy and linguistics and focuses on language as a stand-alone system, and its properties. The second approach originates in philosophy of mind and phenomenology and concerns human cognition and the way language influences human relation to reality. In the first stage of my work I will study the structural properties of language as a system and the particularities of the functioning of this system implemented in humans. Here I will temporarily abandon the phenomenological first-person point of view and approach language as if I were speaking about material implementation of an abstract system. In the second stage I will consider various ways in which language contributes to human cognition: its embodiment, enactment and influence upon perception. Here the works of cognitive linguists, neurophilosophers and the proponents of embodied cognition are to be scrutinized.

Leaving alone the questions of the nature and origins of language, I will focus on the empirical problems evident in the way language exists and develops in individuals and society. Here I again mostly stick to the individual perspective, as it allows us to use the findings of cognitive science and phenomenologically oriented research on embodied cognition. The results of this inquiry into language functioning will be combined later with the phenomenological accounts of human cognition. Thus we will have a whole picture of language functioning in cognition.

The issue that I aim to clarify in this part is the one announced in the beginning: how language and conceptual structures function in human cognition. This task can be objected to by Wittgensteinian scholars as requiring “a view from nowhere”: we always are “inside” of language, which hinders

investigation of its influence upon cognition. But I do not presuppose a close connection of our world to our language, as Wittgensteineans do. As I have explained in chapter 3, I propose to use various instruments and perspectives within our human predicament to reveal some limits and functions that we cannot see when adopting only one perspective. Thus, I will consider the influences of language that can be identified with empirical investigations.

6.1 Language as a system implemented in humans

This part will help us to see the empirical issues and particularities of language functioning in us humans. I am going to investigate our natural language, taken in its existence and functioning in human communicative action. The obvious feature of language on the empirical level is that it exists in human agents. Here I am going to define language very simply and crudely: *language is a system which has an ability to relate a sign to a particular meaning*. This feature of language may also be named intentionality: the signs of language point at something which is beyond language. They relate us to the world. This is an approach to language proposed by Frege²⁰⁵, early Wittgenstein²⁰⁶ and many others. Their main focus was the meaningfulness and truth-value in language, taken as an abstract system of propositions.

Choosing this approach to language as a theoretical background, in this chapter I am going to focus on the way this system is implemented empirically: i.e. in humans. Every system is affected by the “material” that it is implemented in. Thus, I will consider language as an abstract system, as language is approached in Wittgenstein’s *Tractatus* but paying attention to its life and changes, as in *Philosophical Investigations*. On the empirical level, language is open and undergoing constant changes, being in continual process, never arriving but always in transition. Let us focus on the influence human limitations and diversity have on language. I want to emphasize that the main point of our interest here is the way language exists *in connection to humanity*, the way it is used by humanity and is affected by human conditions.

So we will start with some self-evident empirical features of language. They are so evident and commonplace that philosophers often just ignore them. It is quite common for philosophy to treat these aspects as some sort of noise, having no sense and not worth an investigation. Therefore, quite usually scholars neglect the aspects of diversity of language and immediately turn to the investigation of what are considered “core” issues of language: syntax, grammar, propositional structure, etc.

²⁰⁵ Frege [1892] 1980.

²⁰⁶ Wittgenstein, *Tractatus Logico-Philosophicus*.

But I am going to highlight this “interfering static” and make it a starting point of my inquiry. I argue that these features are decisive for the existence of language in human mind and society. They play a crucial role in cognition, in conveying of meaning and in communication. Here are some obvious language features we can easily identify in our everyday experience:

1. All humans have partly different dictionaries.
2. All humans hold various sets of meaning (intensions) for the words.
3. (Entailed by 1 and 2) Each human exemplifies and uses a unique aspect of language.

We can give an umbrella term for all these features: the diversity of language. The first feature has to do with the amount and selection of words people use in their discourses. Some have a wider dictionary, some a narrower one. People usually have preferences in choice of words and expressions. The existence of synonyms for many words makes it possible for humans to use only some aspect of language. But nevertheless, the dictionary of any two given people differs.

The second feature concerns the meaning people derive from words and sentences. People vary in their understanding and usage of even the most basic words – colors, for example, as experiments show.²⁰⁷ Sometimes humans argue whether a given color sample is blue or green. Everyone connects the meaning of words and sentences to his or her unique experiences. The simple word “cat”, for example, means different things for those who have a pet cat and for those who only see pictures of it. Moreover, the meaning of each word is amplified by various emotions, connotations, etc., that everyone has in connection with words used in communication.

We can find an “objective” meaning of each word in a dictionary, but this meaning is in fact a dead one: no human strictly endows words with the meanings from a dictionary. Lived language is fluid, it keeps changing, words in it are used in multiple and different situations with thousands of new shades of meaning. If we follow the Wittgensteinian idea that the meaning of the word or expression is mostly in its usage we can find almost endless variations of word usage, which no dictionary can grasp. The possible usage of the words and expressions in a metaphorical sense makes the variations of meaning even wider.

Thus, the meaning of language is composed of lots of unique dictionaries and unique sets of meanings instantiated in individuals. But people speaking the same language still have an environment common enough to have a satisfying communication within the limits of shared dictionaries.

²⁰⁷ Here I mean the body of experiments on the basis of the Whorfian hypothesis of linguistic relativity. The hypothesis and the empirical findings related to it will be investigated later.

Thus, here I draw a conclusion that even if we take language as a compound symbolic system, as structuralists propose, its functioning and meaning nevertheless depend on the humans it is implemented in. *The meanings in language depend upon the words and utterances humans use.* We can also notice that every human produces only some part of the discourse possible. During our lifetimes we use only some resources of language according to our needs and goals.

So what we call spoken language actually consists of the aspects provided by different people. Just as a book of verses is composed of various words and sentences, language is composed of these discourses, expressed by different people. For example, I might hardly ever in my life speak of cryogenic machinery. But there are people producing discourses on this topic and thus specifying meanings of the words related to this part of language. Thus we can see that a sort of division of labor takes place in the usage of language and production of discourse. We have also to keep in mind that people are using language to express their own particular meanings.

So there is no stable order in language when it comes to its existence on the basis of human beings and society. Language constantly changes both in its usage and the material and structural properties (phonetics, grammar). It is therefore problematic to think of language as some completely ordered and regulated structure, as the early Wittgenstein, Noam Chomsky and other structuralists propose.²⁰⁸

However, language is usually presented in textbooks that way. It is only when we investigate the way people actually use language that we cannot deny the significance of human agency in language. We can trace, for example, the changes that any language undergoes despite what is stated in textbooks. It is sometimes possible to introduce some new linguistic form artificially, but the humans using this language must be persuaded to change their linguistic habits.

Language is evolving in human societies and small groups following the needs these groups use it for. But language is non-arbitrary. It develops according to some inner rules: some words become widely used, other go extinct, and the same happens to grammar structures. These changes do not take place because people just arbitrarily decided so. Moreover, language exists and undergoes changes even in societies that do not know anything about grammar or syntax, but are simply using it.

Thus, language also exists on the super-personal level we have distinguished previously. This level is constituted by linguistic actions of individuals, but their relation to it is quite complex. Here we can again recall Giddens' theory of structuration. Human linguistic activities are as recursive as other kinds of social activities: "In and through their activities agents repro-

²⁰⁸ Wittgenstein, *Tractatus Logico-Philosophicus*; Chomsky, 1957.

duce the conditions that make these activities possible.”²⁰⁹ Language at the social level, as some common norm of word use and communication, shapes individual linguistic actions. It also undergoes changes related to individual actions, but the former are not directly determined in an intended way by the latter.

We have to redefine our image of the language in light of these facts. Here is a brief summary of them:

1. Language dwells in humans and depends on humans.
2. Meaning depends upon human usage of language.
3. Each human produces only some aspect of discourse.
4. Language is a product of collective work, perceived as a whole communicational system.
5. Language is not arbitrary.

But a precise look at these features of language reveals that they are not specific only to language. They can be applied to many human products, such as culture, knowledge, etc. They also dwell in human actions and depend on human actions. People cannot change them deliberately; instead they have to follow some non-arbitrary regularities of these things. Both culture and knowledge result from the same intricate collective work, where every unit produces only some very specific and small part of the whole thing and is conditioned by the whole.²¹⁰ But nevertheless, language, culture and knowledge are functioning as whole systems, where all the parts are connected to each other.

The existence of language, as with culture and other human phenomena, is a result of a specific human situation. Humans exist both as a person and as a group (or groups). Here I am going to focus first of all upon the issues of language in individual perspective, and then I will also consider some communicational functions of language.

6.2 Against objectification of language

I am going to make a step further from objectification of language as an abstract system. I argue that despite the usability of such concepts as “language”, “knowledge”, etc., as if they designated some objects, the substantiation of them eludes us. We tend to detach meaning or instance of language, knowledge or verification from the verifying, knowing or language-capable subject. But it is the subject (or subjects) that functions as a substrate for such things. Speaking about them we sometimes tend to hold them as

²⁰⁹ Giddens, 1984, 2.

²¹⁰ Hofkirchner 2007, 475–476.

separate and having their own objectivity existing apart of the subject. But language dwells primarily in our mind and discourse. Thus, I agree with the later Wittgenstein that it is a particular instance of language game which shapes meaning.²¹¹ The language game is played by humans and can be played even by a single language-capable individual in inner speech. We can silently talk to ourselves, for example figuring out how to name the emotional state we are in, or comparing “pros” and “cons” of a decision to get married. I will consider inner speech later in this chapter.

Language can hardly function apart of us and the way we use it. By itself it is a set of signs to be used by capable agents. If we speak about normative language, language as presented in textbooks and dictionaries, we only mean the usage of it by some peculiar groups of people. Languages existed even before any textbooks or dictionaries of them could be composed. The languages of tribes existed and developed, emerged and got extinguished with their bearers during many ages before any researchers could approach them and place their language in dictionaries.

There are always other ways of language usage than is stated in textbooks: various jargons, dialects, speech-forms. These are defined in a relationship to a specific human activity or group. Language cannot be fully detached from humans without losses. Even dictionaries and textbooks need a human being to comprehend them and act upon them to bring language to life.

The indispensability of human beings as a sort of running gear for language to function is best seen in the failure of attempts to create completely adequate machine translators. As Claude Piron stated, machine translation, at its best, automates the easier part of a translator's job; the harder and more time-consuming part usually involves doing extensive research to resolve ambiguities in the source text, which the grammatical and lexical exigencies of the target language require to be resolved.²¹² This part of the translator's job can be done only in relation to human experience. Thus, there is something about language that is beyond automatable rules of the relation of some signs to some other things. Meaning and understanding are related to the human, and cannot be preserved in automatic following of some rules.

Just as language cannot be detached from human beings without losses, neither can knowledge when expressed in language. Hence language, culture, knowledge, etc., are all suffering from the same plague or blessing, as our minds do: diversity, multiplicity, limitations, and ability to form compound structures from singular units. All of these cannot be caught into a system of strict and permanent rules.

²¹¹ Wittgenstein, *Philosophical Investigations*, §§244–271.

²¹² Piron, 1994.

Thus, in this elaboration of language in its functioning in humans as individuals and society we have formulated several points important for our investigation.

1. Accounting for language we have to bear in mind that it exists and functions in humans.
2. Language is affected by human existence in individuals and society.
3. Language is instantiated in each human in individual ways.
4. Language is constitutive of human cognition.
5. The meanings in language are determined in particular acts of communication.

We can conclude that the observed diversity of meaning and compound structures of discourse and knowledge are the byproducts of human implementation of language. So these are general issues of language. Another set of philosophical issues I will consider relates to the particularities of language's immediate influence on cognition. This influence should be investigated on the level of particular physical properties and functions. This is to be discussed next.

6.3 Language functioning in cognition

This part of my inquiry will involve empirical data from cognitive science and neurophysiology. Some ideas and concepts of philosophy of language have been used by phenomenologists and cognitive scientists and thus will be present here. Until recently language was mainly considered in cognitive science as a complex communication system. Thinking was held as a computational process taking place with the help of language-like systems of symbols. It was assumed that knowledge and language understanding are based on a semantic memory system separated from the brain systems related to sensory motor activity.²¹³ A formal approach to language resulted in the notions of representation and computation as the main forms of mind functioning. But nowadays we can trace considerable changes in the attitude of philosophers towards language. These changes involve the introduction of embodiment into consideration of language.

First I will provide an overview of the empirical studies of language's role in cognition, attempting to find an answer to the questions: *How does language affect our cognitive processes? Can linguistic structures be considered as mediating cognition?* In the following I am going to list the results of the experiments, taking them at face value. The interpretation of these

²¹³ Fodor, 2001, 115.

results in regard to the concepts of subject and object will be given at the end of this chapter. For now, we can just accept the terms in which these results have been formulated by the scholars.

The idea that language is embodied is expressed by scholars in various fields investigating language and mind. Some, such as George Lakoff and Mark Johnson, devise this idea from observations on language structure and metaphors. Others convey experiments on human cognition and action, finding that language understanding influences action preparation and execution.²¹⁴ Embodiment of language affects multiple levels and instances of human cognition. Thus, I will list the main ideas concerning embodiment of language:

- Human conceptual structures used in language and thought grow out of bodily experience and make sense in terms of it;²¹⁵
- Understanding of the meaning of sentences is affected by motor affordances;²¹⁶
- Language is used by humans as a cognitive tool;²¹⁷
- Language influences our perceptions;²¹⁸
- There are embodied patterns of language understanding – the so-called image schema.²¹⁹

In the following I will consider these ideas and their implications for this research more precisely.

6.4 Packing of reality into language

Contemporary scholars strive to formulate the role that language plays in the act of perception and how it is possible to connect linguistic and conceptual systems. Their conclusions are sometimes quite close to the ideas of Merleau-Ponty. Just as Merleau-Ponty believed that body and attention are crucial for perception, so also current researchers claim. What Merleau-Ponty saw from the inside of a first-person perspective, empirical research encounters from the observations made from the outside, in a third-person perspective.

Additionally, the researchers propose to consider language as an *instrument of selective attention*. It is language that drives our attention and makes us choose some objects and aspects of the world for consideration. Dipper,

²¹⁴ McGurk, McDonald, 1976.

²¹⁵ Lakoff, 1987.

²¹⁶ Damasio, 1994; Wilson and Iacobini, 2006.

²¹⁷ Vygotsky 1962, 1987; Mirolli and Parisi.

²¹⁸ Whorf, 1956.

²¹⁹ Lakoff, 1987; Johnson, 1987.

Black and Bryan conveyed series of experiments with recognition and linguistic “packaging” of situations on presented pictures. They proposed to people with some types of language impairments such as aphasia to look at the pictures and state what was depicted there, and to explain the meaning of a sentence heard. It turns out that the process of “packing” the meaning into linguistic expression differs from the process of “unpacking”.

In order to turn a depicted situation into sentences humans have to pay attention to lots of details and make connections between various parts of the picture. “There is constructive effort required to process both the word *jumping* and the word *reading*, as both events describe a relationship between certain subparts and you have to conceive of the parts as a whole”.²²⁰ Thus, in order to “pack” the perceived reality into a single word we need to bring together a lot of elements of an action and relevant parts of reality involved into it. Moreover, in order to produce a sentence we have to make the considerable effort of cutting off lots of secondary details, such as manner of jumping, clothes on a jumping person, environment of jumping, etc. This process reminds us of the “adding-to” and “cutting off” mechanisms in perception that we considered in chapter 5. Here the word functions as a guideline in accordance with which we perceive.

This is how researchers explain the particularities of this process. In order to pack the information into a “skeletal” form of one word or short sentence we need to perform a special cognitive task where our attention is directed by language. There are several theories attempting to describe how this is realized.

The claim made in each of these theories is that there are certain components of conceptual representation that have a special linguistic status; that are marked for their importance to the linguistic system. The specific detail of how these components are marked differs from theory to theory: in Pinker’s 1989 model (as in a number of others) their status is reflected by including in the model a semantic level as part of the linguistic system; in Jackendoff’s model (1997) the same meaning components are those in the conceptual system that are made ‘visible’ to the linguistic system by the ‘correspondence rules’ linking the two systems; in the model outlined by Bierwisch and colleagues there are intermediary processes linking the linguistic and conceptual systems, allowing the linguistic system to identify the important parts of conceptual information and then ‘match’ such information to available lexical items. Language therefore plays a role in directing attention to selected aspects of experience, acting as part of our system of selective attention. The selectivity of this attention-directing results in the paring down of conceptual representation into a linguistically relevant representation.²²¹

²²⁰ Dipper, Black and Bryan, 420.

²²¹ Dipper, Black and Bryan, 422.

Dipper et al claim that it is language that directs our attention, thus allowing us to easily spell out the states of affairs we encounter. This model is combinable with the model of natural semiotics in visual perception described by Arecci we considered in 5.1.4. Both Arecci and Dipper et al suppose that there is a semantic (or conceptual) level driving our low-level perceptual functions. And if we take for granted that language plays a crucial role in this processes of perceptual selectivity, we can have a complete picture of language functioning in embodied cognition.

6.5 Influence of language upon perception

The great impact upon research of the role of language in cognition was made through the seminal work of Benjamin Lee Whorf, a student of Sapir. Language was proposed by Sapir to influence the very way humans think and behave. Hence, speakers of different languages perceive reality differently. Whorf has developed Sapir's idea and argued in *Language, Thought, and Reality*, that our language is not simply a tool we use to express thoughts and ideas, but it shapes the very ideas we might get:

We dissect nature along lines laid down by our native languages. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds – and this means largely by the linguistic systems in our minds. We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way – an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is, of course, an implicit and unstated one, but its terms are absolutely obligatory; we cannot talk at all except by subscribing to the organization and classification of data which the agreement decrees.²²²

Whorf named this idea “the principle of linguistic relativity”. Later his idea inspired research within the fields of psycholinguistics and anthropological linguistics. These investigations have shown that the words which language contains, for example the words naming colors, make people using this language perceive colors differently.

The Whorfian idea was corroborated by further studies, mainly by linguists and anthropologists. For example, Bowerman and Choi compared spatial distinctions in English and Korean.²²³ In Korean there is no such distinction as “in” versus “on” in English (e.g. “apple in a box”, while “ring on a finger”). Koreans perceive the differences of position of an apple and a

²²² Whorf 1956, 213–14.

²²³ Bowerman and Choi, 2001 and 2003.

ring in terms of “tight fit” and “loose fit”. Thus, Bowerman and Choi have supposed that this difference of concepts that are inbuilt in language affects the way children learning Korean or English develop spatial concepts.

Recently the idea that language is connected to perception has found corroboration on neurophysiologic grounds. Experiments at the University of Hong Kong were conducted proving the influence of language on the perception of color.²²⁴ People were asked during neuro-imaging sessions to decide whether two squares were of the same color. Some of the squares had easy-to-name colors (such as 'red' or 'blue'); others hard-to-name colors. The result shows that the perception of both kinds of colors involved the same brain regions which have long been known to be associated with color vision. However, compared with the hard-to-name colors, the easy-to-name colors evoked significantly stronger activation in the brain areas responsible for word searching. This shows that there is a strong link between language processing and color perception.

Thus, the idea that language influences perception is corroborated both on the level of sociological and psychological experiments, and neuro-imaging. But how exactly is language connected to perception? To which extent does the former influence the latter and what is the mechanism of this influence? To answer these questions cognitive scientists propose various experimental findings and theories. In fact, theories in cognitive science of how language relates to perception and cognition are quite complicated. They usually involve some hidden conceptual levels. This is how Mirolli and Parisi propose to theorize about language:

We can model language as a second sensory-motor network which is added to the basic sensory-motor network that we have already described and which underlies the organism's non-linguistic behaviour. We will call the two networks the 'sensory-motor network' and the 'linguistic network', respectively. Like the sensory-motor network, the linguistic network has a layer of sensory input units connected to a layer of hidden units connected to a layer of motor output units.²²⁵

They use the model of network as a basis for their theory and stick to the input-output model of cognition, where output of one network forms input for the other. As Mirolli and Parisi state,

in a neural network some particular sensory input is encoded as some particular activation pattern in the network's input units. This activation pattern eli-

²²⁴ University of Hong Kong (2008, April 10). Language And Color Perception Linked In Human Brain. Science Daily. Retrieved October 30, 2009, from <http://www.sciencedaily.com/releases/2008/04/080407201846.htm>

²²⁵ Mirolli and Parisi, 2009, 522.

cits another particular activation pattern at the level of the hidden units, which in turn elicits a particular activation pattern in the output units.²²⁶

The cognition takes place as “neural networks learn to respond appropriately to sensory input”.²²⁷ Therefore, the whole model is computational.

However, the computational approach to perception and comprehension is criticized, especially by phenomenologists. Hurley shows in lots of examples that it is not input or output per se that matters for cognition, but the *relation between the two*. He uses the example of distorting goggles to show that people can adapt and perception can change despite the fact that the input remains the same.²²⁸ Thus, we may conclude that the relation between language and perception is more intricate than computational models suppose. But in fact the aim of my research does not require construction of a theory of language’s influence on perception. It is sufficient for us to accept the argument that *language takes part in our perception, driving our attention and how we skip details and “pack” what we perceive into words and utterances*.

Another important finding with respect to language is quite close to the Sapir-Whorfian hypothesis of influence of language upon perception. The experiments conveyed by Patricia Kuhl have shown that language pre-structures our cognitive capacities so that we are predisposed to distinguish certain sounds. The learning of language by infants is depicted as a creation of a network of structures fine-tuned for audial composition of a certain language.²²⁹ Patricia Kuhl has shown that early auditory experience profoundly alters perception. In the first few months all infants are capable of discerning differences between all the phonetic units existing in the world’s languages and produce the sounds of any language. But by 12 months infants’ abilities to discriminate the whole range of sounds fade, and their speech production abilities begin to reflect those of the ambient language community.²³⁰

²²⁶ Mirolli and Parisi, 2009, 521.

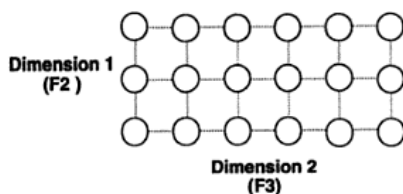
²²⁷ Mirolli and Parisi, 2009, 521.

²²⁸ Hurley, 1998.

²²⁹ Guasti, 2004.

²³⁰ Kuhl 1998, 300.

(a) **Physical Map**



(b) **Perceptual Maps**

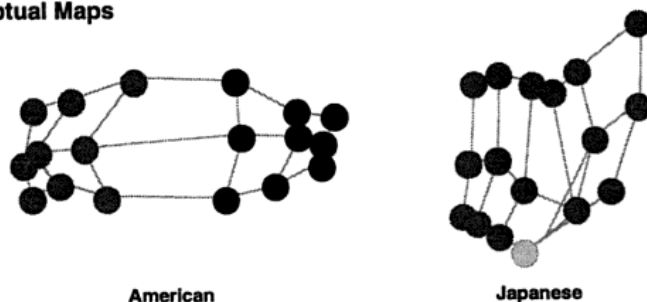


Fig. 2

The research proves that listening to ambient language causes infants to form culturally specific “perceptual maps” for human speech.²³¹ The warping of perceptual map in comparison to the physical map can be seen in Figure 2.²³² Here Kuhl first depicts that (a) consonant tokens /r/ and /l/ are generated to be equally distant from one another in acoustic space. Then she shows that when these sounds are perceived by listeners from different cultures, distance is distorted (b).

In Americans’ mental map we can see the distinct regions of the best /r/ and the best /l/. In each of these regions “perceptual space is described as *shrunk*, representing the predicted magnet effects surrounding the /r/ and /l/ prototypes”.²³³ But perceptual space separating these sounds is *stretched*. So two magnet attractors in a sense repel one another, leading to easy perceptual distinction. In contrast, the perceptual map of these sounds in Japanese adults differs. There is no shrinking or stretching, thus for Japanese these sounds are hard to distinguish. This difference in perceptual maps from each other and from the physical map is a result of early exposure of a child to ambient language. Kuhl thus describes this process of perceptual warping:

My work indicates that mental maps for speech are brought about through linguistic experience, that they develop unconsciously, do not require rein-

²³¹ Kuhl, 1998, 297.

²³² The image is taken from Kuhl’s 1998 paper.

²³³ Kuhl, 1998, 303.

forcement, and, once in place, are very difficult to undo. I have described experience as ‘warping’ perception because the brain maps physical information in a way that distorts reality. Fortunately, the mental maps that result are shared among those whose experience is similar and this, in turn, facilitates linguistic communication.²³⁴

This empirical observation has important ramifications both for individual perception and – what is even more interesting – for shared perception and experience. On the individual level this means that our native language shapes our sound perception and produces patterns according to which we perceive sounds. According to experiments, we are predisposed by our native language for certain mapping of sounds and perceptual abilities, which Kuhl names “perceptual filter”.

Furthermore, there is a special issue in our perception, the so-called “perceptual magnet effect”.²³⁵ Due to this effect noise and varieties of pronunciation do not prevent our perception of language. As Kuhl states, “human perceptual systems group stimuli into categories, many of which exhibit internal structure”, which means that “members of a category are not perceived as equal”.²³⁶ This effect is evident not only in relation to audial perception, but also in visual perception.

Therefore, there can be distinguished prototypic exemplars of a category, which function as a magnet for other category members in the sense that the latter are perceived as similar to it. For example, we can distinguish a prototypic blue color or a prototypic sound “s” for a given language. This was also shown in the example of adults attempting to study a foreign language. The sounds of the foreign language that are close but not identical to those of one’s native language are perceptually assimilated to them.²³⁷ Other studies have shown that there are better exemplars of a certain color, or of a certain physical object. These exemplars have privileged status: they are more quickly encoded, more durably remembered and preferred over other members of the category.²³⁸

In this effect we can see in our perception some guidelines related to language, although not on a semantic, but rather on a physical level. Moreover, the “perceptual magnet effect” can be evident in many domains and instances of perception. This effect, combined with semantic structures related to language, may provide an answer to the problem of the guidelines in our cognition that we have investigated previously. The perceptual magnets are good candidates for the guidelines, as they tend to be preferred over other close stimuli and better remembered.

²³⁴ Kuhl, 1998, 297–298.

²³⁵ Kuhl, 1991.

²³⁶ Kuhl, 1991, 93.

²³⁷ Best, McRoberts, and Sithole, 1988.

²³⁸ Garner, 1974, Mervis and Rosch, 1981.

6.6 Embodied comprehension of language

Thus, we have seen that physical properties of our native language alter perception, resulting in “perceptual maps” with “perceptual magnets” in them. But the researchers make the next step claiming that language influences our bodily action as well. There are intricate and complex facts of language enactment and embodiment. For example, the empirical research shows that our language is embodied in a sense that:

- a) The structure and comprehension of language is correlated with our bodily properties;
- b) Language comprehension alters bodily actions in a special way.

Let us start with the investigation of the first claim. The claim that human conceptual structures used in language and thought grow out of bodily experience and make sense in terms of it is proposed by George Lakoff: “the core of our conceptual systems is directly grounded in perception, body movement, and experience of a physical and social character”.²³⁹ Lakoff investigates metaphors we use and comes to the conclusion that metaphor is a basic cognitive principle of organization, both of language and of thinking: “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.”²⁴⁰ Metaphors, for example “love is a journey”, function in a manner of mapping the concepts of a source domain to a target domain. Metaphors help us understand the abstract notions on the basis of familiar ideas. For example, the birth model is the basis of the metaphorical sense in a sentence like “Necessity is the mother of invention”.²⁴¹

Moreover, Lakoff investigates embodied properties of language understanding. As his research shows, we use our everyday bodily experience, for example orientation in space, movement, difference between left and right, or our upright posture, to express and comprehend even the most abstract ideas. Upright posture contributes to the difference between “high” and “low”, for instance, in morals. The vertical position of our body in space, in comparison to the horizontal position of animals’ bodies produces a different perspective of the world and different access to the objects in it, as our hands are free. Thus, the way we exist as embodied beings with certain bodily properties and affordances influences the way we think and speak. Consequently, our conceptual structure and linguistic structures are shaped by the peculiarities of our perceptual structures. In order to comprehend language

²³⁹ Lakoff, 1987, xiv.

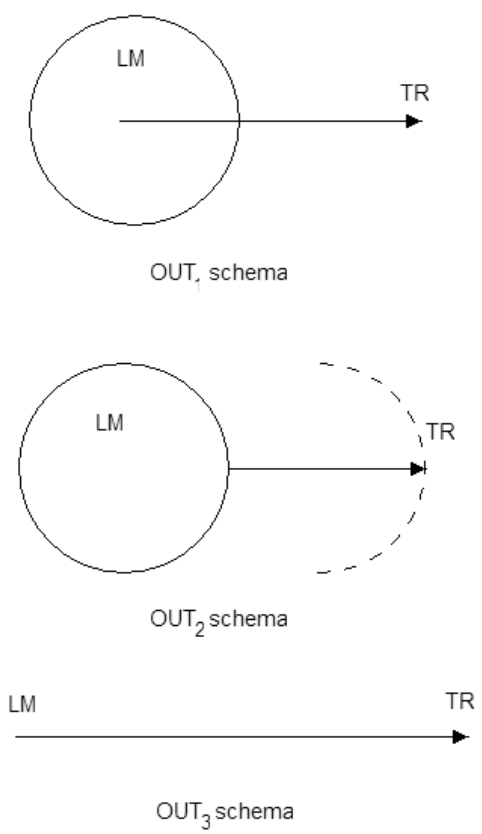
²⁴⁰ Lakoff and Johnson, 1980, 3.

²⁴¹ Lakoff, 1987, 93.

we need our bodily experience. This is how Lakoff summarizes the idea of the embodiment of cognitive models evoked in language:

Cognitive models are embodied, either directly or indirectly by way of systematic links to embodied concepts. A concept is embodied when its content or other properties are motivated by bodily or social experience. This does not necessarily mean that the concept is predictable from the experience, but rather that it makes sense that it has the content (or other properties) that it has, given the nature of the corresponding experience. Embodiment thus provides a *nonarbitrary* link between cognition and experience.²⁴²

The idea of embodiment of language was developed by Lakoff,²⁴³ Johnson,²⁴⁴ and other scholars and has led to the theory of the image schema. According to this theory, the image schema is an embodied structure of experience that underlies the mapping of conceptual metaphors, considered above. Johnson proposes an example of the image schema analyzing the concept expressed by the word “out” (Figure 3).²⁴⁵



²⁴² Lakoff, 1987, 154.
²⁴³ Lakoff, 1987.
²⁴⁴ Johnson, 1987.
²⁴⁵ Johnson, 1987, 32.

Fig. 3

In this picture LM stands for a landmark, and TR for a trajector (direction and the object of it) of the action. Here several kinds of usage of the word “out” are schematized. In the first case “out” means an action, where the trajector leaves a spatially bounded landmark, as in (1) “John went out of the room”. In the second case the trajector is a mass spreading out of a landmark, as in (2) “She poured out the beans”. The third case presents a usage of the word “out” where a landmark is not defined. It is the linear motion along the path, as expressed here: (3) “The train started out for Chicago”. However, this explication of the meaning of the word “out” considers the most frequent uses of it. It manages to grasp and describe some of the uses, but not all of them, such as “the light is out” or “he is out to save lives”. This means that the idea of image schema probably needs revision.

The image schema is a recurring, dynamic pattern of our perceptual interactions and motor programs. Johnson and Lakoff propose clearly structured image schemes, aiming to present all the conceptual schemes used in our language. But, as it is seen in the example of the word “out”, an image schema does not grasp all possible usages and neglects the spontaneity, creativity and dynamics of language usage. Nevertheless, I consider this idea important, as it manages to reveal embodied nature of language understanding.

Here we have to mention again the link between the conceptual scheme and embodiment and a way this link is expressed in language. Our body, the way we act with it and get embodied experience, form a basis for the concepts (at least, for some of them) to emerge and be structured. Thus, language is rooted in our bodies and the embodied actions we might take. Although the claim for the existence of the image schema is debatable, the relation of our concepts and language understanding to our bodily properties is evident.

6.7 Language understanding in action

Now I will move to the investigation of how language relates to action, based not on the analysis of language, but on psychological experimentation. Experiments have shown that semantic properties of language also contribute to our bodily actions, and action execution contributes to understanding. For example, the “McGurk effect” indicates that language understanding is affected by bodily gestures.²⁴⁶ This effect was revealed in a series of experiments where participants were watching a speaker’s mouth pronouncing a syllable that conflicted with the heard syllable. First, the participants watch-

²⁴⁶ McGurk and MacDonald, 1976.

ing a video claimed to see and hear pronunciation of the syllable “DA”. But in a task consisting in hearing only the same sound without watching the video they declared to hear the syllable “BA”. Finally, in a task consisting in watching only the same mouth movements performed by the same human without sound, they declared to perceive the pronunciation of the syllable “GA”. This experiment shows that bodily actions contribute to perception and language understanding. Humans receive the meaning not from the sounds solely, but from the set of bodily actions related to language production.

The McGurk effect reveals one side of language embodiment: how body influences comprehension. The main role of this experiment is to show that language understanding is not a processing or syntactical manipulation of the system of abstract symbols. Body structures our understanding of language.

But there are experiments that have shown that the embodiment of language understanding is even stronger. These have led to the *motor theories of language understanding*. For example, one of the theories proposes that language understanding is based on a simulation of the sensory motor conditions described in a sentence or utterance. It proposes that meaning is embodied in the sense that it is strictly connected to the bio-mechanical nature of bodies and perceptual systems.²⁴⁷ Meaning arises from activation of the same cognitive processes during both language understanding and action execution. So we can say that not only our mind, but also our body, understands language. Motor affordances influencing action execution are elicited during language understanding: for example, our muscles, related to jumping, slightly contract when we hear the word “jump”.

Moreover, the experiments have shown that action affordances can be activated by word labels attached to target objects. Here I mean the experiments conducted by Glover et al. This is how they describe what was done:

We examined whether affordances could be activated implicitly by words representing graspable objects that were either large (e.g., APPLE) or small (e.g., GRAPE) relative to the target. Subjects first read a word and then grasped a wooden block. Interference effects of the words arose in the early portions of the grasping movements. Specifically, early in the movement, reading a word representing a large object led to a larger grip aperture than reading a word representing a small object. This difference diminished as the hand approached the target, suggesting on-line correction of the semantic effect.²⁴⁸

Here I want to emphasize two discoveries: first, that the character of action in its initial stages was shaped by the word; and second, that in the late stages the action was conformed to an object. Thus, we may suppose that this

²⁴⁷ Glenberg, Havas, Becker, and Rinck, 2005.

²⁴⁸ Glover, Rosenbaum, Graham, and Dixon, 2004, 103.

experiment corroborates the phenomenological idea of the object's shaping of the action directed to it. But at the same time it buttresses the cognitive psychologists' idea that language activates our bodily affordances. Thus, the actions are in fact shaped by both the language we use and the objects towards which the actions are directed.

Nevertheless, this experiment proves that words are capable of evoking some readiness for action. The main inference from this and similar experiments we can make is that language is interwoven with other properties of human cognition – such as bodily action, visual and audial perception, and comprehension. The modular model of language in cognitive science is undermined by this and other experiments of the same kind. This is how Silvano Zipoli summarized this:

Contrasting the idea that language understanding is grounded in a symbolic dimension and that abstract categorization is made possible by abstract and disembodied comprehension, numerous experimental findings converge into assuming that linguistic symbols become meaningful only when mapped to non-linguistic experiences such as action and perception.²⁴⁹

We do not have a separate language-processing module, which functions independently of other modules, as cognitive scientists hypothesized.²⁵⁰ On the contrary, our perception, body and language compose a tightly knit whole system. These experiments reveal an intimate link of language to our body and its actions. This link exists both in perception and in comprehension and the way our language and concepts are structured. We may put it the other way round: *our bodily actions, our perception, our patterns of sound recognition, are permeated by language*. We can see that language is not only shaping so to say mental perceptions, i.e. the way we perceive colors or discriminate various things in reality. Moreover, and more interestingly, language is influencing our bodily reactions and movements. Language cannot be seen as a separate subjective or objective system, as it is ubiquitous in cognition and permeates various levels in it. We have to reconsider the status of language in the process of cognition on the basis of these findings.

6.8 Language in communication with oneself

The topic of language use for communication is too big to be investigated here. That is why I am going to consider only one aspect of the communication function of language – the one immediately related to cognition. As we have seen in the examples from developmental psychology, language used in

²⁴⁹ Zipoli, 2010, 167.

²⁵⁰ Fodor, 2001, 115.

communication with a child contributes to the development of cognitive skills. Thus, the cognitive and communication properties of language are interwoven. Here I am going to consider these properties and their relation approached by a series of experiments and theories. I will use a paper by Mirolli and Parisi, which deals precisely with the issue of the cognitive functions of language applied to communication with oneself.

Following Vygotsky's approach, these scholars emphasize that language should be considered as a cognitive tool.²⁵¹ Here I want to stress again that speaking of language as a tool should be understood in a Heideggerian way, as present-at-hand. This tool is internalized and normally not perceived as a separate instrument. The function of language contribution to cognition is realized in the form of "private speech". In psychology the term "private speech" is used in another sense than in philosophy to mean usage of language for oneself, the production of utterances addressed to oneself. The approach to language as a cognitive tool with a special emphasis upon private speech was proposed quite long ago in the works of the Russian psychologist Vygotsky. By observations of children's behavior he came to the conclusion that language is a cognitive tool, allowing us to perform newly-learned actions.

According to Vygotsky, the most important moment in child development is that in which the child begins to use language not only as a social communication system but also as a tool for controlling her own actions and cognitive processes. When the child is challenged by a particularly difficult task she is often given help by an adult or a more skilled peer, and this help typically takes a linguistic form. Later on, when the child is facing the same or a similar task all alone, she can rehearse the social linguistic aid which helped her to succeed in the problem. This is called 'private speech', which, according to Vygotsky, plays a fundamental role in the development of all human psychological processes.²⁵²

Thus, here we encounter a new aspect of language existence and functioning: language used by an individual for herself. The usage of language for oneself may take the form of private speech – speaking aloud to oneself, or inner speech, which takes place without any word pronunciation. Inner speech is believed to be an internalized private speech. Vygotsky claims that as the child grows, the self-directed speech changes into silent speech.²⁵³

It may be argued that in this case language is nevertheless used as a communication tool. We can see that some researchers consider private speech as an act of communication. For example, Berk says that private speech is the "silent dialogs that we carry on with ourselves".²⁵⁴ Indeed, when an indi-

²⁵¹ Mirolli and Parisi, 2009, 517–528.

²⁵² Vygotsky 1962; 1978.

²⁵³ Vygotsky 1982.

²⁵⁴ Berk 1994, 21.

vidual uses language for herself, she both generates speech and listens to it (sometimes even arguing with herself). But, as we will now see, the process is more intricate. As Mirolli and Parisi claim, there is a difference between the structures and functions of language used for communication and those of language used privately. The difference is the lack of syntax in the language used privately and specific functions of it, such as memorizing something:

Using language as an aid to memory can be advantageous for at least two reasons: (a) delegating the memory function to the linguistic system can leave the sensory-motor system free to process other information useful for acting in the environment while linguistically remembering previous information, and (b) linguistic signals may occupy less space in memory than the sensory-motor information they refer to... Language can also allow ‘symbolic theft’, that is, a way of learning useful categories not by direct sensory-motor experience with the world but through cultural transmission mediated by language. And it can be argued that talking to oneself can be useful in many additional ways. It can allow an individual to direct her attention to specific aspects of the environment, to make explicit predictions of future states of the environment, and to explicitly plan future actions.²⁵⁵

Moreover, language is used for guiding and driving thought, as Vygotsky claims.²⁵⁶ But, what is more puzzling, the structure of inner speech differs from the structure of language used in communication with others. Vygotsky points to the observation that inner speech is simplified and is hardly intelligible without context.²⁵⁷ But there is more than simplicity and context-dependence in inner speech. In fact, inner speech violates the rules of syntax. As Mirolli and Parisi state, “talking to oneself does not require a complex syntactic language”.²⁵⁸ Nevertheless, it remains helpful and lack of syntax does not reduce the functions of inner speech listed above. But it is commonly held that syntax is necessary for understanding language and for the meaningfulness of utterances. Why, then, does inner speech not need syntax for being meaningful and understandable to the individual?

Mirolli and Parisi propose an evolutionary explanation for this fact. They claim that:

[I]t is reasonable that the discovery of the cognitive uses of language could have happened quite early in language evolution, in particular before the transition from a holistic proto-language to the full-blown compositional language of modern humans. And this is just what the computational models reviewed here suggest: none of them included any kind of syntax, but just the ‘symbolic’ capacity to associate ‘meanings’ (as internal representations of

²⁵⁵ Mirolli and Parisi 2009, 525.

²⁵⁶ Vygotsky 1979, 99.

²⁵⁷ Vygotsky 1979, 243–244.

²⁵⁸ Mirolli and Parisi, 2009, 525.

significant experiences) with linguistic labels. Nonetheless, they demonstrated that addressing to oneself even simple linguistic labels can provide important individual advantages.²⁵⁹

But I think that an evolutionary explanation is insufficient, as it is not clear why external communicational language has evolved better than private language (or why private language degraded in comparison to external), and why there is this structural difference at all. As children learn language in communication with adults, where the language is present in a clear enough syntactical form, it is not evident why this language turns into inner speech violating syntax. I argue that the answer to this question might be given in the light of the reconsideration of the cognitive situation, which will be done in the next chapter. I am going to claim that as language is related to action in a specific environment, inner speech plays only a supportive role and is concomitant to action. I will return to this issue later.

Investigating language and its contribution to perception and shared experience we may respond to Gallagher's critique of the lack of respect to intersubjectivity in research on cognition. Evaluating and summarizing the development of the research in philosophy of mind, Shaun Gallagher indicates the lack of attention to intersubjectivity. He emphasizes that we learn how to perceive the world through intersubjective communication:

Concerning development, there is good evidence from developmental psychology that we gain access to a meaningful world through our interactions with others. Our primary relations with others, which are, from birth through the first year of life, the dominant and most central experiences that we have, gradually prepare us for "secondary intersubjectivity" at around 1-year of age. Secondary intersubjectivity is characterized by shared attention; we start to learn about the world by seeing how others relate to objects in that world. Objects take on meaning in the pragmatic contexts within which we see and imitate the actions of others.²⁶⁰

I agree with this critique and propose that we should take language as an important variable in human cognition. Language might be a missing link in the system of cognition as it is described by phenomenology – embedded, enacted, extended, etc. I would add that we not only learn the perceptual patterns, but we also have to learn how to use language in relation to various forms of action upon perceptual patterns. Because language is tightly bound with perception, as experiments by neurophysiologists and cognitive scientist have shown, they must be concomitant with the process of learning how to address the world. So we have to account for the role of intersubjectivity in language and perception acquisition bound together.

²⁵⁹ Mirolli and Parisi, 2009, 525.

²⁶⁰ Gallagher, 2008, 171.

6.9 Language in cognition: conclusions

Investigating empirical facts about language I accepted the explanations and terms used by the scientists. Now it is time to revise the results and to clarify the concepts that we are going to apply to make sense of the results. Fortunately, the concepts used by cognitive linguists are mostly the same as those we have distinguished for dealing with the cognitive situation. These are: action, conceptual scheme, mediating structures, language, first-order reality. But indeed, such concepts as “hidden units” or “perceptual maps” need to be revised to conform to terms of this research. Thus, I will make an overview of the findings of cognitive linguists and psychologists, reformulating them.

The persistent idea in accounts by cognitive linguists is the *embodiment of language* in cognition. Language does not function as an abstract system. It has a strong link to the whole process of human cognition. The ubiquity of language starts from perception, where language function is manifold, stretching as far as to directly affect action. Language contributes to cognition via semantics and via physical properties (phonetics, prosody,²⁶¹ etc.).

First, on the semantic level language *drives our attention*: we tend to distinguish the objects in reality in accordance with the words and concepts of our language.²⁶² Moreover, as language “packs” reality into words, it allows us to skip the details and perceive parts as a whole: for instance, human hands, head and a newspaper as “reading”. But the very way of packing reality into concepts and words is correlated with our bodily properties and affordances.²⁶³ The structure of language is grounded in our bodily experiences and the actions our body affords. Thus, in a sense the conceptual structure of language expresses what we can do with and via our bodies. Furthermore, language through mediation of conceptual schemes has access to our bodies and the embodied actions we might take.

Moreover, the semantic functioning of language is corroborated by various bodily actions. Humans receive meaning not from the sounds of language solely, but from the set of bodily actions related to language production.²⁶⁴ Thus, bodily actions contribute to language understanding as well as language understanding affecting bodily actions.²⁶⁵ We therefore might suggest that what is meaningful should be relevant for action.

On the level of phonetics we find that physical properties of the spoken language create “perceptual maps”.²⁶⁶ This means that the sound set of a given language *moulds our perception* so that we, together with other native

²⁶¹ Prosody includes such physical properties as rhythm, intonation and stress of spoken language.

²⁶² Dipper, Black and Bryan, 2005, 420–422.

²⁶³ Lakoff, 1987.

²⁶⁴ Glover, Rosenbaum, Graham, and Dixon 2004, 103.

²⁶⁵ Glenberg, Havas, Becker, and Rinck 2005.

²⁶⁶ Kuhl, 1991.

speakers of it, distinguish some sounds better than others. There is also evidence that our visual perception is molded as well as related to “paragon” objects which we distinguish easier.²⁶⁷ Fortunately, other humans share the same perceptual moldings, thus the latter contribute to communication instead of hindering it. And if we combine these discoveries of developmental psychology with the theory of Whorf, we can conclude that language contributes to the molded shared perception both via semantics (for example the set of words for colors) and phonetics. It influences the way we hear sounds, perceive colors or discriminate various things in reality. We can also correlate these shared perceptual maps, created by language, to the guidelines of perception. In a word, humans possess *shared perceptions* that circumscribe the first order objective, but in turn yield second order world allowing us to perform actions, cognize and communicate.

The final experiential feature of language is its communicative function. In fact, there is evidence that even in inner speech language maintains some communicational features: it is the “silent dialogs that we carry on with ourselves”.²⁶⁸ But language used for oneself differs structurally from that used for communication with others: it violates the rules of syntax.²⁶⁹ Thus, language instantiated in a particular human has some special properties and a unique context. We have to take this fact into account, as instantiation in humans is the way language exists on an empirical level.

We can put together the conclusions in regard to the role of language in cognition this way:

- Language discriminates certain parts and connects them in our perception in a certain way.
- Language influences our perception, molding it in a regular way.
- Language drives our attention and “packs” the reality into words and concepts.
- Language is embodied.

So, language provides both the possibilities of cognition and limitations of it. We tend to conceive of our language as a powerful tool. But it provides not only power, but also borders, such as moldings of perception. And by itself it is limited, as it corresponds to our bodily affordances, which in turn are limited. It was shown above that our body has considerable limitations. Consequently, we could ask with reasonable doubt: is our language powerful enough to grasp everything in the world? As language is for action and is understood in terms of action, limitations of our action faculties may lead to the same in language. In chapter 9 I will consider the limitations that arise

²⁶⁷ Best, McRoberts, and Sithole, 1988.

²⁶⁸ Berk 1994, 21.

²⁶⁹ Mirolli and Parisi, 2009, 525.

from the relation of language to action. Additionally in 9.2.4 I will show how language allows us to direct our intentions beyond the limits of the current situation.

Here it is evident that language functions as an embodied feature and is connected with various issues such as meaning, perception and conceptual schemes via bodily actions and affordances. Here we again see the great interweaving of seemingly distanced faculties taking part in perception. Language is also embodied and permeates all the levels of cognition. Thus, its role and functioning in the overall cognitive situation should be reconsidered and reconceptualized. The results we get here urge us to draw a new picture of the role of language in cognition, accounting for all its properties and manner of existence.

6.10 Concluding remarks on empirical and conceptual issues

Here I want to take a brief glance at the overall issues regarding conceptualizations of the cognitive situation and empirical findings, observed in chapters 1-6. Nowadays a significant trend can be observed in philosophy of mind and some related areas. This trend originates in the realization of the problems which philosophy of mind and philosophy of knowledge encounter in attempts to provide a coherent account of cognition. On the one hand, as there are several rival approaches to knowledge and truth – social constructivism and scientific realism, to mention only the main ones, some authors realize the need to reconcile these accounts on a new basis, as proponents of ANT do. On the other hand, philosophers have started to cooperate with cognitive scientists and psychologists in the investigations of human cognition. Phenomenologists find lots of points of intersection with cognitive science. Hence, they attempt to provide explanations for the facts discovered in these investigations. So the aforementioned trend consists of endeavors to approach anew and re-conceptualize the cognitive situation and introduce new categories into it.

Steven Ward describes this trend as an attempt to depart from the modernist paradigm of knowledge, as well as the postmodernist critique. Proposing Actor-Network Theory as a possible solution for the problem of epistemic categories, he claims that:

From the position of actor-network theory, the existence of truth and reality are not, nor arguably have they ever been, dependent upon pure epistemically derived distinctions; nor do they just dissipate with their subsequent philosophical deconstruction and dissolution into text. Consequently, the loss of epistemic foundations is no need to mourn or to find a new label or alterna-

tive model for intellectual activity – although it does require a new model of knowledge.²⁷⁰

But nevertheless, the researchers do not propose any new paradigm that could integrate the discoveries and new data. Even ANT, seen as a solution by Ward, is claimed to be dead and does not succeed in making a new fruitful model of cognition.²⁷¹

Thus, we see that findings of contemporary philosophy of mind and language blur the formerly clear distinction between subject and object. The cognitive situation where we seek truth is much more complex. Consequently, we can see how various conceptual and empirical endeavors are moving in the same direction, as if they had some as of yet indiscernible point of attraction. Some trends in philosophy (social constructivism and phenomenology) considered in chapters 1 and 2 tend to erase the old borders of the subjective and the objective. They redraw the cognitive situation anew, incorporating some features of the objective into the subjective and vice versa.

Moreover, the empirical research allows philosophy to make steps towards a new picture of cognition. Phenomenologically-oriented empirical research makes great progress here. As we have seen in chapter 6, new findings allow scholars to mingle language with bodily affordances and action.²⁷² Cognition turns out to be embodied, embedded, extended and enacted, which means that we cannot easily detach the cognizing human from the instruments used in cognition and the situation where cognition takes place. Thus, in comparison with the clear Cartesian distinction between cognizing subject and cognized objects this may seem a total conceptual chaos.

Merleau-Ponty avoided this problem by claiming the indissoluble unity of the subject and object in the human body. But as more and more different, complex interrelations in human cognition come to the fore in studies by phenomenologically-oriented cognitive scientists and linguists, the claim of unity has come to seem too simple to account for everything observed. Researchers investigate the particular mechanisms of functioning of the human body on personal, sub-personal and social levels, which demand detailed conceptual accounts, which subject-object unity idea cannot provide or be a source of.

In fact, the concepts of the subjective and the objective are almost never used in phenomenologists' accounts of cognition, which we have considered, so there seems to be no reason to keep them. These concepts, inherited from the history of philosophy, seem to have no explanatory power or theoretical importance. They account for the most abstract level but are almost useless

²⁷⁰ Ward, 1994, 137.

²⁷¹ Latour, 1997, 15.

²⁷² Glover, Rosenbaum, Graham, and Dixon 2004, 103; Glenberg, Havas, Becker, and Rinck 2005.

when we deal with particularities of cognition, such as cognitive illusions or neuronal functioning. Thus, to conceptually account for the cognitive situation it may be more fruitful to start with the particular issues which are central for phenomenology and philosophy of mind, and basing upon them, to formulate the abstract concepts.

Given all the aforementioned I come to the conclusion that the conceptual division of the cognitive situation into the subjective and the objective is to be redefined. We have to take into account the compound structure of our embodied cognition, its limits and inherent structure, which we have considered in details in chapters 3-6. So I propose to re-conceptualize the cognitive situation so that it would fit the aforementioned findings. In relation to what I will discuss later, knowledge of these empirical findings is relevant in the following way: these issues will reveal and exemplify the interrelations between the parts of a triangle of cognition, which I propose as an alternative to subject-object distinction.

This will also help us to find the location of truth and especially religious truth in cognition. If cognition and language understanding are embodied, then when speaking of religious claims and their truthfulness we should take the human body and its particularities into account. Embodied issues of cognition show that knowing and understanding is not simply about logic. Thus, we have to focus on the embodiment to look for the reasons for the diversity of truth claims.

PART III: APPLICATION

7 Re-conceptualization of the cognitive situation

7.1 The results of the work done

Thus we have moved closer to the final destination of the long journey made in parts I and II. As was stated in the Introduction, in order to solve the problem of truth we have to return to the roots of it. We need to re-approach the very cognitive situation where truth emerges, to the very terms of the subjective and the objective, in which this situation is usually placed. If there are no satisfactory solutions of the problem of truth, we need to revise the philosophical systems and basic terms in which this problem is believed to be solved. So I considered the rendering of cognition in dualistic terms of the subjective and the objective, both on conceptual and empirical levels. Now it is time to look back and summarize the results of this journey for the next step: re-conceptualization.

In chapters 1-6 I have completed the tasks scheduled at the beginning. I have used a preliminary conceptualization of the cognitive situation in terms of the subjective and the objective. Consequently, to investigate the cognitive situation where truth emerges, the following steps were done:

1. Sketching the field of inquiry: folk notions of the subjective and the objective;
2. Revision of various conceptualizations of the subjective and the objective;
3. Overview of empirical results from sociology, linguistics, cognitive and mind sciences, and the observations of phenomenology in regard to cognition.

In order to proceed to the fourth task – the conceptual reconstruction of the cognitive situation – first I will summarize the work done, the findings and conclusions. We can start by recalling the main ideas articulated to guide the investigation. In the first chapter I decided to adopt what I considered the most fruitful among different conceptual accounts of the subject. Thus, I accepted the ideas of **mediation of cognition** (Kant)²⁷³ and of the **subject-**

²⁷³ However, I change Kant's idea and move the mediating structures from the a priori level to the level of our embodied experiences.

object unity (Merleau-Ponty) in cognition. The empirical findings have elucidated the properties of cognition, such as mediation and subject-object unity, and shown that they are to be taken as indispensable for accounts of cognition. Cognition, indeed, is mediated by guidelines of semantic nature. Furthermore, the intuition of subject-object unity was developed in accounts of cognition as embodied, embedded, enacted, and extended. These have shown that the body, the instruments used and the environment are indispensable for cognition and should be included in the description of cognition. Hence, we cannot draw a categorical line between the subjective and the objective in cognition.

But despite the fact that some features of Kantian and Merleau-Pontean accounts are proven to be fruitful and compatible with empirical issues, still I cannot accept the entire conceptualizations to which these features belong. The Kantian approach, highlighting mediation in cognition, is at the same time unable to elucidate the embodied and extended nature of cognition, which I consider crucial. Likewise, the formulation of the cognitive unity of subject and object by Merleau-Ponty demands further development and conceptual work. The Merleau-Pontean explication of subject-object unity can be used as a basis for a solution of the problem of truth. But the Merleau-Pontean account does not provide conceptual tools to deal with the problem of truth, which is our main interest here. Thus, for making an account of cognition, grasping all the details, and not the only aspect of knowledge, it should be complemented with an account for the permeation of language and mediating schemes upon cognition. Also we have to make a clear conceptual distinction between different aspects of the cognitive situation.

Similar problems arose in relation to the objective. After consideration of the conceptualizations of the objective in scientific realism, social constructivism, and in the philosophy of Wittgenstein I arrive at a conclusion that none of these provides an exhaustive account that I might use, as each of them highlights and explains only some aspects of the objective. But still, they pointed at important directions an investigation of the objective should head toward. We can infer some important points from the examined conceptual accounts of the objective, the ideas they all share.

The first important point is that the objective is accessed through **non-arbitrary action**. In scientific realism the action is structured by the rules of scientific method and theories. According to social constructivism, action is structured by society and social institutions. According to Wittgenstein, access is governed solely by rules of language (syntax, language games as related to form of life). Thus, such different accounts of the objective as those of scientific realism, social constructivism, and the philosophy of Wittgenstein, all point at the idea that non-arbitrary action plays a crucial role in access to the objective. The structure and limitations enforced upon action leading to the objective may differ, but the main idea remains the same: in order to access the objective, a **rule-governed** and **non-arbitrary**

action in a special framework (which I later will call environment) should be taken. The action is structured according to the rules of such a framework.

The second important idea that can be inferred from all these accounts is that objective-revealing action is connected to some **linguistic structures**. It might be theories and conceptual schemes in science, language itself, language games, and conceptual schemes according to Wittgenstein, or discourses of social groups according to social constructivism. In any case, language plays a crucial role in governing action and in accounting for the objective.

The third crucial point is that the objective is manifold. Various accounts focus upon certain aspects of it. But in fact we can summarize these aspects and strive to account for all of these taken together in a new conceptualization. This is necessary as we need an account of truth and cognition, which renders a whole picture, not the pieces where cognition is determined differently. Hence, speaking about the objective part of the cognitive situation, we have to embrace the *intersubjective, physical and linguistic* dimensions.

Thus, I have concluded that the following issues are to be taken into account in relation to the objective:

1. Access to the objective is provided by rule-governed action.
2. Language and conceptual schemes are crucial for our relation to the objective.
3. There are various aspects of the objective, such as intersubjective (social), physical and linguistic.

Thus, I accepted these ideas as the reference points for the following investigation of empirical accounts. Considering the results of cognitive science, phenomenology, sociology, and linguistics, we have seen how these features were indeed unfolding in empirical observations. But the way they come out empirically is complicated. The quite simple ideas listed above appear to be interwoven with the intricacies of embodiment, enactment and the semantic guidelines in cognition. The wide survey of empirical issues of language, action, perception and cognition has shown the following features of cognition, crucial for the account of truth.

- a. First, *cognitive action is constituted by body, environment, instruments, language, conceptual schemes and mediating structures*. Moreover, all of these are interwoven in the process of cognition. For example, in order to account for cognition of the way an apple falls to the ground we cannot content ourselves with a mere description of the fall of the apple itself. We have to account for all the environmental, embodied, conceptual features included in this situation, as these are constitutive for cognition. Cognition in all its ma-

nifestations, starting from the basic act of perception, involves multiple semantic, environmental and bodily structures and actions.

- b. Second, there are some properties in our cognition that contribute to *the constitution of the second-order world* and drive our action and perception. I have called these mediating features guidelines. They are related to language and provide expectation and direct human activity and cognition. They turn our bodily affordances into active organs of cognition, not merely passive recipients of outer impulses. The guidelines contribute to the filling in of the perceptual gaps, as in the phenomenon of perceptual presence.
- c. Furthermore, I have concluded that *cognition is limited by our body*. This starts with the basic physical properties and stretches to the conceptual schemes of our language, which also are influenced by embodiment and enactment. Moreover, I have shown that what we have considered intersubjective is also affected by limitations. The intersubjective part of the objective is formed by shared perception, driven by language, which in fact molds the way we perceive the world. By molding I mean the emphasis of some things and absence of other things in our perception. Humans possess *shared perception* that molds the first order world, allowing us to perform actions, cognize and communicate. Consequently, in speaking about truth we have to keep in mind these limitations of our cognition and the way they affect our access to the first order world.

7.1.1 The answers we have found

I have asked the following questions in the beginning of the first and the second chapters:

- 1. Where are the limits of the subject and object?
- 2. Does the subject include the body?
- 3. How does the subject relate to the object?
- 4. Is the objective completely independent from the subjective in cognition?
- 5. What is the nature and structure of the objective?

Now we can see that while we have the answers to some of these questions, in a certain sense others cannot be answered at all. For example, we cannot find the precise limits of the subjective and the objective (1), as cognition is embodied and embedded. There are strong interrelations between all the parts involved in cognition, thus we cannot consider anything here as “inde-

pendent” (4). The relations in the cognitive situation include the body, language, actions, instruments, guidelines and environment (3). All these cannot be grasped conceptually by the terms of the subjective and the objective. Hence, the attempts to find the answers to these questions lead us to a conclusion that the very definition of the cognitive situation as a relation between the subjective and the objective is inappropriate.

Thus, on the level of empirical facts the issues of the subject-object unity, mediating structures and structured action turned out to be quite complicated. In fact, the intricacies of embodied approach and the complexities of the facts revealed in experiments of cognitive science *make it impossible to map the empirical findings back onto the conceptualizations in terms of the subjective and objective relation*. The situation is too interlaced to fit any of the conceptual accounts of cognition. That is why I cannot adopt the scientific, sociological or Wittgensteinian formulations of cognition per se, as they are insufficient and do not help to reach the aims of the investigation.

I cannot adopt the Cartesian, Kantian or Merleau-Pontean formulations of cognition either, as these are also based on the subject-object model. The Merleau-Pontean account can be partially used as a basis for the explanations of the facts observed, but it faces a different kind of problem, which is related to the common feature of the phenomenological accounts. The problem is that the embodied, embedded, enactive descriptions of cognition, which are proposed in phenomenologically oriented research, are very wide and we cannot apply them to the classic issues in epistemology of truth and knowledge without additional conceptual work. Hence, we cannot fulfill the main task of this work – the accounting for truth in general and religious truth in particular – solely on the basis of these approaches. So I believe that in order to draw these new findings into my inquiry for truth in religion I have to provide a clear conceptual basis. We need a conceptual scheme both capable of mapping the findings of the embodied approach, and to deal with the truth issues.

7.1.2 The cognitive situation re-approached

Thus, as the conceptualizations turned out to be insufficient to properly account for the facts, we need to find some basis to construct the new conceptions. I suppose that the work done presents the crucial ideas that we can use for formulation of the new conceptualization.

An overview of empirical relations and processes in the cognitive situation has led us to a conclusion that the concepts of the subjective and the objective do not help us to make sense philosophically of the empirical results. These concepts are incompatible with embodied, enacted, situated, language-driven cognition as described by mind sciences, linguistics and phenomenology. I have inferred that what was conceptualized as subject, in fact has many features of the objective in it: it includes not only intellectual

capabilities in it, but also body, instruments, environment. Furthermore, language is a complex issue that cannot be attributed to the subjective or the objective only, but nevertheless plays a crucial role in cognition. But in this case, how can we account for the cognitive situation? I propose that we have to re-conceptualize it, taking into account the embodied, extended, embedded and enacted nature of the subject, as well as the role of guidelines in cognition. While doing this I will strive to keep in sight the results of our consideration of empirical accounts of cognition. Thus, I am going to put together all the features of cognition I have explicated here, creating a conceptualization capable of aiding in the mapping of and conceptual codification of our present knowledge, and the reformulation of the existing facts and insights in light of this codification.

In fact, if we take the most important issues of the revised conceptualizations and empirical results, the re-conceptualization of the cognitive situation follows in a natural way. The new conceptualization is based upon the following concepts I devised in the previous chapter:

- Rule-governed action;
- Embodied, embedded, extended, and enactive cognition;
- Mediating structures;
- Linguistic guidelines of cognition;
- The second order world (*Umwelt*).

As we can see, there are several main issues interwoven in the cognitive situation: 1) the physical part, including body, instruments, and environment; 2) the social part, including situation, culture and the products of social acting; 3) the linguistic or semantic part, which provides the guidelines in cognition; 4) the action which involves body, instruments, environment, and language.

But as my goal is to construct a basic conceptualization, I aim to put these issues into as few general concepts as possible. That is why I propose to give an umbrella term for both the social and physical (including bodily) issues: *environment*. As we have seen, they all take place in embodied, embedded, and extended cognition and are involved into cognitive action. I claim that the differences between social and physical amount to structural and level differences within a whole domain of what is environmental. In a similar way, I embrace the varieties of social, individual, and physical action with the single term *action*. The intended and non-intended actions are considered as variations within one domain.²⁷⁴ In turn, the mediating semantic struc-

²⁷⁴ In some explications the term “action” presupposes intentionality. But here I am using the term “action” in an instrumental way, supposing both the intentional and non-intentional meaning.

tures, functioning as guidelines of cognition, are put under the umbrella term *language*.

Thus, I claim that instead of distinguishing subjective and objective, it is more useful to divide the cognitive situation into 3 parts: **language**, **action** and **environment**. It is these concepts that we find present in almost all the explications of human cognition we revised. These issues are constitutional for cognition and, as we will see in the following, the main relations and tensions arise between them. This conceptualization implies the embedded and enacted nature of cognition, as we distinguish environment and action as constitutive of cognition. Moreover, the embodiment and extended cognition are also present in this conceptualization, as I consider body and instruments as a part of the whole environment.

So I stipulate a system of cognition where language, action and environment are the indispensable constitutive parts. Knowledge emerges on the basis of all these three parts interrelating. Furthermore, they are interwoven and function as a whole system. Hence, knowledge is expressed in language, accessed through action, which takes place in and via environment. If we take away any of these components, the result will not be knowledge. In the following I will proceed in the same manner as before: I will clarify the conceptualization and then see how it functions on the empirical level.

7.2 Conceptual restructuring of the cognitive situation

In this part I am going to repeat the work I have done in regard to the concepts of the subjective and the objective. The same stages will be repeated in relation to the new conceptualization. First we need to clarify the conceptual system and then to see how it contributes to the explanation of empirical facts. Finally, we will apply the conceptual results of the work to the problem of truth in religion. So here I will strive to answer the following questions:

1. What are environment, action and language? How do we conceptualize them and put their limits? How do they satisfy the folk notions of cognition?
2. How do these conceptualizations fit the observations and empirical data on the process of cognition, regarding phenomenology, philosophy of language, and cognitive science?
3. Where do the tensions among environment, action and language come from? What are the implications of them for the issues of truth in religion?

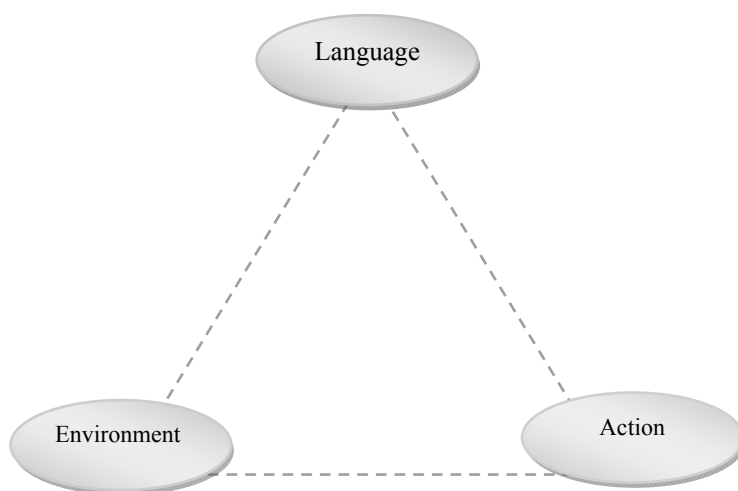
At the first stage I am going to extend the proposed re-conceptualization of cognitive situation. To make it simpler, I will first provide a short descrip-

tion of the whole scheme and conceptual work. I am going to compare this re-conceptualization to the folk notions of cognition as well. In the next chapter I will show how this scheme works on the empirical level and explains such issues as perception, language functioning, cognition and construction of conceptual schemes. These issues also will be discussed in detail later.

I propose to consider a cognitive situation as 3-fold. Instead of two parts in cognition – subject and object – I introduce three parts: environment, language and action.

These parts are connected to each other and therefore could be depicted as

Cognitive situation



a triangle. In order to shorten the expression, I am going to call the tripartite model of cognition that I propose a **triangle of cognition**. This triangle is a basic model of cognition. This means that to claim something as knowledge we have to find all three interconnected parts in it, not two as in the subject-object model. It is this triangle where all the main relations and features of cognition are taking place.

Let us now briefly consider the main parts and relations of this triangle to be taken up in empirical details later.

Environment

In introducing this part, I make a radical departure from the previous understandings of cognition in terms of the objective and the subjective. In this concept the ontological border between material and mental is erased, as I take both of them as one part of the cognitive situation. Thus, environment consists of everything I can act with and upon – be that my own body, the air

I breathe or my memories. It is a space where actions are performed, the points at which the actions are directed. It includes everything accessible by the senses and available for action at each moment of time, both physical and mental. Moreover, we do not just take actions upon the environment, but we actually act *with and via* the environment, as we have seen in the examples of embodied and extended cognition. Some parts of the environment are parts of our action in a Heideggerian sense of readiness-to-hand. Moreover, to become constitutional for our perception and cognition they are internalized and not perceived as separate objects.²⁷⁵ Therefore, the body, the instruments and the space of action, such as my lungs, oxygen mask and the air I breathe, all belong to the domain of environment.

Environment is not homogeneous: I do not mean that there is no difference between bodily and mental at all. There is. But this difference amounts to the variations within environment, not to ontologically separated issues. Some parts of the environment are more malleable and accessible while others less. This difference of the domains and levels in the environment is the reason why some parts of the environment are easily and almost immediately accessible, while others require lots of effort and time to take action upon. For example, I can manipulate a form in my imagination effortlessly, while shaping a rock takes time and labor. Therefore, there are various grades of tension between our acting and environment.

The environment is equivalent to the “second order world” I have stipulated in chapter 2. I also want to distinguish the first-person perspective of the environment. In the following I will use the word *Umwelt* to refer to the environment from a first-person perspective. It is the totality of the *Umwelts* that I name environment.

Action

By action I mean the changes in environment that are causally related to an agent. Here I also erase the border between physical, social and mental, treating the actions directed to all the domains equally. In action, mental and physical aspects transgress all the purported borders and thus mental and physical appear united. Thus all the layers of the environment – from neurons of my brain to the molecules of an apple take part in my grasping the apple. Action considers the environment and produces some changes in it. Action is the only way of being for living things, it occurs constantly. The neurons fire, the muscles contract, we inhale and exhale, move, shift attention, think, imagine, dream. All of these I consider belonging to the domain of actions. Through actions we expand, master and change our environment. Action both establishes our environment and brings us to its limits.

²⁷⁵ Leder, 1990, 14.

An action needs an environment in order to take place. Moreover, the particularities of the environment determine the character of action taking place there. For example, Otto's usage of a notebook, considered in chapter 4, changes the simple action "remembering", which other humans may perform using their natural memory only.²⁷⁶ Human cognitive actions are complex and involve multiple layers of the environment. In my grasping of a mug action pierces the environment from the neuronal level to the bodily movements, the mug itself and everything I have to move and displace in order to get the mug.

I have also to clarify the term "agent" that I use here. The agent is not equivalent to the subject of classical accounts of cognition. I claim that using the triangle model and an embodied-enacted approach to cognition we do not need to introduce a disembodied Cartesian subject into an account of cognition. Moreover, as I consider action as taking place in and via environment, the attempts to delimit or detach the agent from body, instruments or environment are in vain. Thus, I propose to consider agency as a feature, which involves various parts of environment for its realization: body, skills, identities, etc.²⁷⁷ An agent is not "naked": it is constituted by various issues, but is not identical to them. The constitutional issues change, changing the judgments and actions of the human, but agency persists.

Action involves multiple layers, each of which acts in accord with its features. Thus, we can account for action in terms of orchestrated acts, involving various parts of the environment, from the neurons to the atoms of the apple and the air in the room. We need to separate the actions based on language usage, though.

We can distinguish skillful actions and their relation to language as a kind of action especially important for cognition. Language plays a crucial role for action-based cognition. As language is capable of interfering with the causal processes taking place in the environment, it is equally capable of changing the direction and character of the action.²⁷⁸

Action, focused and directed by language, is the only way for us to know the world. Speaking in the vein of Alva Noë's account I consider perception as action.²⁷⁹ Actions are both limited and structured by language. Taking actions we might reveal some white spaces in our environment – the parts we have not acted upon yet. The process and success of an action depends on

²⁷⁶ Clark and Chalmers, 1998, 7–19.

²⁷⁷ This idea is somewhat close to Latour's Actor-Network Theory, briefly investigated in chapter 2 focused on the objective. Latour proposes to consider the symbolic systems, material objects and beliefs as actors. But unlike Latour, I differentiate the action and the environment, thus constructing a threefold system. What Latour attributes to the particularity of an actor, I attribute to the environment.

²⁷⁸ The examples of the interference of language in the flow of actions were considered in chapter 6 on the basis of the experiments conveyed by Glover, Rosenbaum, Graham, and Dixon, 2004.

²⁷⁹ Noë, 2004, 216.

the particularities of the environment, including bodily and mental characteristics of the actor. There are actions that can be taken by anyone with the same results – these actions are usually considered belonging to the domain of physical reality. But what this means is just that these actions are performed in the same parts of the environment with the same instruments.

Language

I consider language as a structured symbolic system that is used to address the environment. As shown in chapter 6, on the semantic level language *drives our attention*: we tend to distinguish the objects in reality in accord with the words and concepts of our language.²⁸⁰ Moreover, as language “packs” the reality into words, it allows us to perceive parts as a whole. But the very way of packing reality into concepts and words is correlated with our bodily properties and affordances.²⁸¹ The structure of language is grounded in our bodily experiences and the actions our body affords.

My first crucial claim here is that the relation of language to reality is provided by *actions*, not by representations. For language to come to life we have to use language, to take an action using language (here I consider speech also as a kind of action). Words do not mean anything unless they are used by someone. The second crucial claim is that language is *communicational* in its nature. Therefore, all the instances of language are produced by someone for communication with someone else. Hence, *the meaning is influenced by the circumstances of the act of communication*. Again, we have to consider the utterances and words of language not as representations of states of affairs, but as cues for action. As we have seen in the previous chapter, this is true even for the usage of language for oneself, which is also communicational.²⁸²

Thus, language’s main function is to direct actions, and it is the actions that bring the meaningfulness to language. I can therefore apply one of the main statements of the embodied-enactive approach, “Cognition is for action”, to language, and claim that speaking is for action as well. If a machine connects words according to grammar rules, it does not in fact use language, as no action is done upon the words thus put together. Grammar and logic reveal features of the inner structure of language functioning. But they do not reveal the way language is connected to reality.²⁸³ That is why I believe

²⁸⁰ Dipper, Black and Bryan 2005, 429–422.

²⁸¹ Lakoff, 1987.

²⁸² Mirolli and Parisi, *Language as a Cognitive Tool*, 2009.

²⁸³ Sean Kelly emphasizes that analytic philosophy, dealing successfully with the meaning within language, is unable to account for meaningfulness – i.e. to explain how language is capable of having any meaning at all. Therefore he attempts to solve this problem through an appeal to phenomenological accounts of intentionality, which reveal “a whole array of more basic, pre-linguistic intentional structures” that make the relation of language to the world possible (Kelly, 59).

that language relates to reality mostly in a non-representational way. When we learn something new, for example, a new idea or a new game, we learn the possible types of action that can be performed upon some environment and use the language to memorize the actions so as to invoke them when necessary. We ask a person to *act* upon a concept in order to verify that a person learned and understood a concept correctly. For example, a teacher of a foreign language asks a pupil to use a word in different sentences to see whether the pupil grasps its meaning.

The relation of language to action accounts for both the embodied understanding of language and the limitations language puts upon humans. Our body and mind can perform endless types of actions. Language provides means of choosing the concrete actions. And vice versa, the particularities of the human body and actions affect the structure of language. Spoken language is intended to direct us towards possible actions. As language is related to both physical and mental actions, we could say that language permeates the whole body, as the experiments of cognitive linguists and psychologists show.²⁸⁴ And the whole body as an environment affects our thinking as well. So language does not artificially construct or naturally reflect reality, but it interacts with it, connects to it via human actions.

As I have made a short revision of the concepts to be used, I am going to make a brief preliminary overview of the effects of this system upon the problems I aim to solve in this work. There are several general consequences relevant for the issues of truth and religious truth-claims, resulting from this conceptual model.

1. The objects are discriminated from the world by our actions and language.
2. The relation between language and environment is mediated by action.
3. Language is non-representational.
4. Our environment is flexible, which means that it is prone to change in the course of our actions.
5. Truth should be defined in terms of the three-part relation between language, environment and action.

From this model we can conclude that there are a lot of things that are in principle accessible but are not (yet) present in our language and environment. The historical discoveries of new things such as atoms and electricity show us this. This is especially true for the individual *Umwelt*. It is capable of expanding and changing due to the actions a person takes and the language the person uses. Religious conversion, for example, makes it possible for the individual to address the known words as “God” or “prayer” to some

²⁸⁴ Glover, Rosenbaum, Graham, and Dixon, 2004, 103.

point of the environment, which was previously “not there” for this person. The world has not changed, but the *Umwelt* and the person’s capability of action did. Thus, there are things (or, better to say, points of environment and possible actions upon them) that we do not address in actions and do not perceive, as their responses to our actions are attributed to some other things. Here I wish to recall as an example the discovery of oxygen, considered in chapter 2.²⁸⁵

Consequently, religious truth claims are to be considered in the light of actions that they evoke and the environment they are a part of. The truth of the claims is a function of the action in a particular environment. We cannot consider truth claims in isolation, as linguistic expression belongs only to one of the three parts of the cognitive situation. If truth claims are to evoke actions, we have to pay attention to these actions and their results. In the next chapters I am going to focus on each key concept and clarify its functioning within the cognitive situation and relation to the other concepts. I will also give examples of the application of this model to some empirical issues.

7.2.1 Re-conceptualization against folk notions of cognition

Let us now recall the folk notions against which we tested the conceptualizations and see how we can account for them from the perspective of this threefold model. At this moment we could have rejected the folk notions, as their main function was to keep our investigation of the subjective and the objective precise and ensure that we are still speaking about the issues in question. Nevertheless, I believe that the folk notions still can be useful for the investigation, as they express important issues of cognition. We just need to reshape them, keeping the key ideas, so that they comply with the new task. As I have decided to re-conceptualize the cognitive situation, I will not attribute the folk notions to concepts such as “subjective” and “objective”. Instead, I claim that we have to list these notions as *statements about the issues of the cognitive situation*. We need to see how we can conceptualize these issues expressed by folk notions, which we distinguished as characteristics of the cognitive situation and previously have attributed to subject and object. These issues could and should be mapped onto the conceptions, which I propose.

The concept of the subjective was intended to explain the following issues inherent in folk notions:

- Access to the objective world;
- Mental (intellectual) capabilities, allowing a subject to know and understand truth;

²⁸⁵ Kuhn, [1962] 1996, 53–58.

- Some kind of individual perspective or space, distinguishing what is known only to me from public knowledge.

The concept of the objective should embrace these issues:

- There are things independent of our minds.
- There are things to which we have experiential access.
- There are things that many people can experience and agree on.

Thus, when I decided to move from the concepts of the subjective and objective to the new ones, I can consider these ideas as a formulation of key features of the whole cognitive situation. So I have to reformulate them so as to keep the purpose of them. Taken as descriptions of main issues of cognition, the above listed folk notions could be put this way:

- A. There are things independent of our minds.
- B. There are things that many people can experience and agree on.
- C. There is access (physical or intellectual) to the things cognized, which makes cognition possible.
- D. There is sometimes a difference between what I can access and what others can access.

Thus, we now have a description of the main issues of cognition to be explained or explained away. Let us see how my re-conceptualization satisfies these ideas.

- A. The *mind-independence* belongs to the **environment** and **action** domains. We can reformulate the mind-independence as a **resistance to certain actions**. As the concept of environment embraces the body, the instruments, the world around us, and the social realities, there are things in our environment that we cannot act on without use of instruments or our body. The apple in front of me cannot be manipulated solely by thinking. This resistance is internally related to the features of the particular environment and the action directed to it.
- B. The *intersubjective* feature of our cognition is provided first of all by **language**, which contributes to the constitution of shared **environment**.
- C. The *access* is provided by means of **action**. In the case of the triangle model the access to the world is immediate and direct, as it is taking place in the environment and considers environment. There are in fact no strict borders between the environment inside my skin and outside of it. Instead, there are various layers or parts of the en-

vironment with different modes of action available. There are also varieties of accessibility between the parts of environment.

- D. The difference between what is accessible for me and what is accessible for others amounts to the differences in **environment available for acting** and perceiving. Consequently, on the basis of the notion of environment we can easily account both for intersubjectivity and individual perspectives. We definitely share some environment and definitely have some individual environmental space that others cannot act upon and in which they therefore cannot perceive immediately what is occurring. My body is an environment with different modes of access for me and for others. The experiences afforded by my bodily properties, my skills and my social group no doubt differ from those of other people. Thus, this difference might lead to varieties of beliefs, moral stances, etc. If deficiency of some hormones in my body leads to absence of compassion or love in my feelings, my environment will consequently be lacking compassion and love, common for other people's environments.

Thus, despite the fact that I cannot completely map the folk notions of the subjective and the objective onto the newly constructed concepts, still it is possible to test the capability of the conceptual system to account for the basic notions of cognition. And as we see, the re-conceptualization is powerful enough to explain the folk notions of the cognitive situation. We now have a picture that can conceptually grasp the process of cognition. Yet we still have to test this system against empirical issues. We need to evaluate whether this system is applicable to empirical facts of cognitive science, linguistics, psychology, and observations of phenomenology. We can also see what consequences this application might have and how it contributes to our understanding of religious truth. Thus in the following I will develop the triangle system of concepts and compare it to the empirical facts we have observed in previous chapters.

8 The parts of the triangle of cognition

8.1 Environment

This chapter is aimed at clarifying what I consider as the environment. The first thing I have to mention here is that the individualistic perspective is mainly adopted here. The reasons for my choice of this perspective have been partially clarified in chapter 5. An embodied, enacted, embedded, and extended approach makes us shift perspective from intersubjective to individual. The emphasis upon intersubjective is necessary if we consider the cognitive situation as a subject-object relation. But as I have redrawn cognition as tripartite, the focus of our attention has shifted. The intersubjective does not play an important role in the triangle model of cognition. But it is important in relation to linguistic issues and will be considered in chapter 8.2.

8.1.1 The structure of the environment

What is environment and what is the difference between it and the first order world? I have briefly stipulated the difference between the first order world, the second order world and *Umwelt*.

- **The first order world** is a totality of the world, which includes both the scope of our current conceptual scheme and actions, and anything that could be meaningfully approached by humankind. As there are infinite ways to conceptualize our relation to the first order objective world, it will not be a part of our consideration. In order to be cognized and therefore dealt with, the first order world must be mapped onto the second order world to be dealt with via actions.
- **The second order world** is a world as it is given to us through our actions upon the world, such as perception, manipulation and various conceptualizations in schemes. This idea includes all the present human perspectives (*Umwelts*), taking them up as a whole. Thus, the second-order world is a basis for intersubjectivity. The actions of other people structure and conceptualize the first order world so that an individual can use these structures and conceptualizations instead of attempting to invent new ones. But the second order world is, so

to say, a world artificially put together: there is no homogeneity in it. It consists of multiple *Umwelts*, none of which in fact embraces its totality. Here we can recall again the Merleau-Pontian claim for a diversity to which we are destined.²⁸⁶

- *Umwelt* is a second-order world from a first person perspective. It can be also understood in terms of an egocentric perspective, following Evans' account.²⁸⁷ This term reveals the phenomenological perspective of cognition. We need to distinguish *Umwelt* from the second order world, as each person possesses a singular unique aspect of the second order world.

Thus, the notion of the environment embraces the second order world and *Umwelt*, having the first order world as a totality of all conceptualizations and actions. Environment is a space where actions based upon language are performed. The environment is constituted by both physical and mental issues – it is what a person is currently taking actions upon and what a person perceives. This way of putting the issue of the environment allows us to account for embodied, embedded, situated, and extended issues of cognition. As the notion of environment embraces the human body as well as cultural, natural, and social aspects, we can consider cognition taking place in this multi-dimensional space.

Environment, due to its mapped structure, allows us to act freely and without excessive thinking efforts within its limits, as we have all the necessary actions, so to say, inbuilt in environment: we are always in a kind of situation – sitting in a chair, reading a book, walking in a forest, visiting a dentist, etc. We know what certain situations, locations, or bodily parts are for. We do not need to figure out special actions for different parts of the environment. We can just “read” them from the environment: situations, locations, etc. Our acting thus both constitutes the environment and is dependent on the latter.

Thus, environment is in fact constituted by conceptualized structures and things. We approach the world and things in it not as a purely physical or completely socially constructed entity. Both physical properties of things and their social meaning are combined in our environment. I have also to emphasize the role of action for the environment. Even the reception of the signals from the world, as visual information, requires perceptive activity of our mind and body, as Alva Noë has shown.²⁸⁸ Moreover, our perceptual activity must be driven by attention: our attention must be drawn to something so we can notice it, otherwise we may be not aware of it at all.

²⁸⁶ Merleau-Ponty, [1948] 2004, 87.

²⁸⁷ Evans, 1982, 153–154.

²⁸⁸ Noë, 2004, 125.

Thus, given that the shift of attention is a kind of action, we might say that the *environment is dependent upon the actions we take*. It takes some effort to introduce humility, quasars, or thin flavors into a person's environment. If I, for example, have never paid attention to the flavor of the daisies, this flavor is present in the second order world (as somebody else did pay attention to it), but not in my personal *Umwelt*. If I eventually pay attention to this flavor it becomes a part of my environment.

8.1.2 Body as a part of the environment

So I consider the environment as including everything accessible for action in every moment of time, both physical and mental. Environment is in constant motion: various actions take place in it: from physiological functioning of our bodies to social and natural processes. Our body is our closest environment, as we can see in the idea of embodiment of cognition. The body is a basis for action and interaction with other kinds of environment. Moreover, as the findings of Lakoff and cognitive psychologists show, the body is a basis for the understanding of language.²⁸⁹ Hence, the body is related to all the parts of the triangle of cognition. Thus, we can conclude that the body is a starting point of the environment, as it grants an egocentric perspective for our actions, speaking in Evans' terms.

The subject conceives himself to be in the centre of a space (at its point of origin), with its co-ordinates given by the concepts 'up' and 'down', 'left' and 'right', and 'in front' and 'behind'. We may call this 'egocentric space', and we may call thinking about spatial positions in this framework centring on the subject's body 'thinking egocentrically about space'. A subject's 'here'-thoughts belong to this system: 'here' will denote a more or less extensive area which centres on the subject. Egocentric spatial terms are the terms in which the content of our spatial experiences would be formulated, and those in which our immediate behavioural plans would be expressed. This duality is no coincidence: an egocentric space can exist only for an animal in which a complex network of connections exists between perceptual input and behavioural output.²⁹⁰

Evans proposes an idea of egocentric space, which is different than an objective space, as it originates in a person's position. This kind of space is firstly a space for actions. Since each of us has a single behavioral space, where our actions originate, a single set of spatial concepts is thereby grounded. Thus, we can complement the idea of *Umwelt* as an outer environment where a person relates through action only to some things – the things meaningful for the person's wellbeing and survival – with the idea of egocentric space, grounded in the person's body. So we can distinguish particular characteris-

²⁸⁹ Lakoff, 1987. Glover, Rosenbaum, Graham, and Dixon, 103.

²⁹⁰ Evans, 1982, 153–154.

tics of a person's environment, based on his or her body: its affordances, disabilities, particularities of functioning, etc. We can also account for the difference between *Umwelt* and second order world, between my and somebody else's environment. Our body is a center of our *Umwelt* and a crucial point of our acting upon all the other parts of environment.

Environment is the starting point and a result of human acting upon the objective world. Our interactions with the world are twofold: we act upon our environment, and some events (including actions of other agents) take place within our environment. Here we might evoke the difference between the personal and non-personal levels of cognition: to some extent we can clearly see our agency in the processes taking place in the world. But there are lots of actions that we do not intend. They result from malfunctioning of the same faculties that are constitutive of our actions: we spit coffee, panic, get Alzheimer's disease. Our physiological and low-level neuronal functioning is an example of the parts of our environment, constitutive for our acting, but capable of functioning without our intention. These sub-personal issues affect our relation with the environment as well as our intended actions. For this reason I will later consider non-personal issues as an inseparable part of action.

From what we have considered we can conclude that *environment is mapped and is centered on the human body*. But it is nevertheless a part of the first order world – not conceptualized and not yet mapped. For this reason our environment can expand or change, and conceptually incompatible environments (such as those of a scientific realist and of an Amazonian child) can coexist. Our environment does not embrace everything, as was shown in chapter 2.

Nevertheless, environment yields an impression of a grasp of the world as it is, without flaws or gaps. The phenomenon of perceptual presence leaves us with a feeling of a complete perceptual grasp of the world we live in, even if we have never seen the other side of the house of our neighbors. In a sense, we have some basic trust in the world and other humans: it goes without saying, that there is the other side of the house or of a tomato, that a car is painted evenly and not in order to make an illusion of various shades, that the countries other people tell us about really exist, etc.

I am introducing this distinction between the concepts of *Umwelt* and the second order world as it helps us to conceptualize the relation between world and actions. We can consider personal environment (*Umwelt*) as a part of the bigger world. Each human possesses only one aspect of the whole second order world, related to this human's egocentric perspective. As in *Umwelt* a person is concerned not with the full range of properties of everything around, but only with some actual part; we have to accept that there are other parts of the world we do not encounter in our acting, or other properties of the familiar parts of the world we do not encounter simply because our actions do not make these properties of things to come to the surface, or be-

cause they are irrelevant, or outside of the scope of our actions. For example, the molecular structure of an apple is irrelevant for our eating of the apple, and the personal characteristics of a clerk in a bank we speak to, are outside of the scope of our interaction with him or her.

8.1.3 Intersubjectivity in environment

Speaking of the environment we also have to take into account intersubjectivity. An environment is not built by isolated actions by people. On the contrary, actions of people contribute to a shared environment, which is then perceived by each individual from an egocentric perspective. Kuhl has described how shared environment in relation to language acquisition is built.²⁹¹ She emphasizes that shared environment is molded in a manner which differentiates the perception of Japanese native speakers from English native speakers. The process of bringing up a child includes the formation of perceptual maps that allow us to perceive the reality in a way common to the group with which we share experience, as we observed in chapter 6. Here is how Gallagher summarizes the role of others in the development of our cognitive faculties:

Concerning development, there is good evidence from developmental psychology that we gain access to a meaningful world through our interactions with others. Our primary relations with others, which are, from birth through the first year of life, the dominant and most central experiences that we have, gradually prepare us for “secondary intersubjectivity” at around 1-year of age. Secondary intersubjectivity is characterized by shared attention; we start to learn about the world by seeing how others relate to objects in that world. Objects take on meaning in the pragmatic contexts within which we see and imitate the actions of others.²⁹²

As Gallagher states, we do not just *learn* to perceive, but we learn to perceptually distinguish objects, and to attend to certain ones over others, on the basis of seeing how others relate to them. Therefore, intersubjectivity is essential to our cognition and structuring of environment. But what kind of intersubjectivity do we have to assess and to what extent do we have to take it into account? There are several people with whom I live, dozens whom I regularly encounter, hundreds whom I know and millions of people whom I do not know and will never have any interaction with. Do all of them have the same contribution to my cognition and need to be classified as part of my intersubjectivity? Obviously they do not. Therefore I believe we have to draw a rather crude conceptualization of the way other people appear in our

²⁹¹ Kuhl 1998.

²⁹² Gallagher 2008, 171.

cognition and contribute to sharing of an environment, just to sketch the issue of intersubjectivity.

To account for the varieties of ways of environment sharing we must recall some previously considered issues. As I have argued, our environment includes embodied, embedded, situated, cultural and social issues. This means that living in the same house is not enough to consider the environment of two given persons to be similar. We have to consider all the parts of the environment, upon and via which a human acts, to identify his or her environment. Thus, environments vary greatly and can have conjunctions at some points and disjunctions at others. Most people do not share most of my environment – their bodies and embodied experiences differ from mine, they belong to other religious groups and traditions, communicate with other people and things, etc. They do not have the same environmental objects, same routines, their actions originate from different environments and result in different environments. Thus, their actions and beliefs will likely differ from mine at the points of disjunction. But nevertheless we can find something in common: childhood experiences, passion for chocolates, etc.

Thus, it is wrong to say that we have to include all the people indiscriminately in the concept of shared environment. Rather, we should distinguish people belonging to similar (at some points) environments from those whose environments differ. We can do this on the basis of the sociological notion of constructed social reality.²⁹³ In this case we should compare the environments relevant for a particular social action humans take. I could consider a human close to me if we belonged to the same parish, for example. But as my conceptualization of environment includes the embodied properties as well, the latter also should be included in consideration of the environmental differences. Hence, speaking about intersubjectivity in cognition we have to pay attention to the way in which the environments that people live in differ. This allows us to account for the diversity of environments and, consequently, for the diversity of beliefs.

But at the same time, we can restructure and change our environment, conceptually grasping new objects and structures (or cutting some things off). We can move to a different country, learn how to drive a car, get married, improve or lose sight, study physics, etc. Even remaining at the same place, we can apply other actions to the world around us or to our own body or imagination. For example, religion changes our environment, allowing us to perceive the same place and people differently. After conversion we can distinguish sinfulness, impurity, seduction in things and situations we previously perceived as, for example, a romantic affair, a ham sandwich, or a good business proposal. Thus, although we can find some permanent issues in our environment (such as physical body), the biggest part of it is very flexible and prone to change.

²⁹³ Berger, Luckmann, 1966, 59–60.

8.2 Language

I am going to base my consideration of language first of all upon the issues of embodied and enacted language understanding, investigated in chapter 6. These issues are used as a basis for conceptual reconsideration of language and for showing how language relates to action and environment.

8.2.1 A non-representational approach to language

It is common to hold that language is a means by which we cognize reality. Language is intentional – that means it has the ability to be directed towards reality. The intentionality of language is crucial for our understanding of meaning and truth. Reality is conceptualized in accordance with the words we use. Strong social constructivists believe that there is nothing but our conceptual schemes, that the whole world is socially constructed, and that the way it is constructed can be seen in language. Others – the realists – say that although our language influences perception, the language still describes real things, real objects and relations that do not depend on our descriptions. But how can we conceptualize the connection between language and reality? How can language be attached to something that is not linguistic? If we speak of language in terms of descriptions and representations, we quickly encounter many problems: what do moral statements describe or of what are numbers the representations?

The notion of cognition as representation, and language as representing, is related to the emphasis on vision as a primary form of cognition, common for (especially modern) Western philosophy and culture. As was explicated in the first chapter, for a long time the term “cognition” was almost identical to a passive, mirror-like, reflective representation of the world. After the Kantian turn in the approach to knowledge this concept was overthrown: philosophers do not hold that humans simply reflect what is going on in the world anymore. We realize the important role of some inner structures forming our cognition.

Still, we can see the remains of this notion of cognition as reflection in the conception of language as representation. Perhaps it is the structure of language itself that deceives us: our usage of words directed to some parts of reality makes us prone to *objectification*. Indeed, the very structure of language at some points makes us believe that language represents reality: the nouns, especially those of medium sized dry goods (such as “cat” and “mat”) seem to represent the things of the real world.²⁹⁴ Representationalists believe

²⁹⁴ The representational way of thinking about the language-reality relation also has ramifications for the truth issue. As Lynch puts the main idea of representationalism, “truth of complex beliefs is recursively defined in terms of the truth of simpler beliefs and the rules for logical connectives, while less complex beliefs “correspond to reality” in the sense that their component parts – concepts – themselves represent objects and properties.” (Lynch 2009, 24).

that sentences and words refer to the world via mental representations of objects and facts. For example, representationalists consider the words “cat” and “mat” as corresponding to mental representations of real cats and mats and therefore believe that representation is a major form of relation between language and reality. As in the pictorial notion of language, introduced by Wittgenstein in *Tractatus*, the words stand for the objects and relations between them, forming pictures isomorphic to the real states of affairs.²⁹⁵

Perhaps the morphological and syntactical structure of European languages native for the philosophers also contributes to the representational bias and lack of attention to action. European languages are mostly either analytic, with low morpheme per word ratio (such as English) or synthetic, with average morpheme per word ratio (such as German). There are no incorporating or polysynthetic languages among European languages. Thus, as the nouns and adjectives stand separately in the sentences, the analysis of the way we speak can easily lead to a conclusion that the main issue of our speaking is the objects, which these nouns point at, and their properties, pointed at by adjectives. But the phenomena of incorporation and polysynthesis, common among some non-European languages, show that the structure of language can be centered upon action, where its direct object explains the character of action, as in the word “breastfeeding”. In such languages, for example North American Mohawk or Siberian Chukchi, the propositions can be constructed not from the separate words, as in European languages, but from a single verb, which incorporates the nouns and adverbs.²⁹⁶

But, at the same time, consideration of language gives us a hint to a new direction of thought. We know that sentences, in order to be meaningful, have to have a predicate in them. And a predicate means that some action upon something is to be performed: an attribution, a comparison, a deduction, a physical acting, etc. This action, clearly enough, is performed not by the language itself, but by humans, listening or reading this sentence. Thus, meaningfulness should be related to action. Additionally, the psychological experiments indicate that language understanding is related to action on the bodily level.²⁹⁷ Moreover, the importance of human embodiment for language understanding was shown in the research on the conceptual structure of language performed by Lakoff and Johnson that we considered in chapter

Lynch proposes also a critique of representationalism, showing that this theory cannot account for moral truths and other truth claims that consider the entities we cannot locate in the physical world. (Lynch, 2009, 35)

²⁹⁵ Wittgenstein, *Tractatus Logico-Philosophicus*, §2.1511. However, as for Wittgenstein there is no gap between the subjective and the objective, the representational relation between language and world is internal, not external, as it is for representationalists.

²⁹⁶ Sapir, 1911, 250–282.

²⁹⁷ McGurk and MacDonald, 1976; Glenberg, Havas, Becker, and Rinck, 2005; Glover, Rosenbaum, Graham, and Dixon, 2004, 103.

6.²⁹⁸ These and other findings reveal an intimate link between our bodily actions and language.

Thus, as the descriptive approach to language turns out to be problematic, I propose a non-representational approach to language. I purport to depart from the notion of language as a representation of the world and meaning as representational and to make a step further in the direction of language as a mediator for actions. I will try to render a relation of language and cognition to reality by the means of action. So I argue that language is an important part of human acting and is connected to reality via actions. I am going to take an utterance (a written utterance will be called a sentence) as a minimal unit of language.²⁹⁹ I have to mention that utterance can contain only one word, such as “Run!”.

I consider utterances as kinds of scripts for actions for our mind and body. Here the term “script” means that we act, following the utterance as some kind of command. The utterances invoke the actions we have learned and shift our attention. These actions include, for example, mental visualization, connection, comparison, etc.

8.2.2 Performative function of language

The emphasis on the relation of language to action I am making here is close to the line of thought developed in the twentieth century by Heidegger, Austin and other philosophers. Austin proposes an idea that language has a performative function as well. He states:

Suppose, for example, that in the course of a marriage ceremony I say, as people will, “I do” – (sc. take this woman to be my lawful wedded wife). Or again, suppose that I tread on your toe and say “I apologize”. Or again, suppose that I have the bottle of champagne in my hand and say “I name this ship the Queen Elizabeth”. Or suppose I say “I bet you sixpence it will rain tomorrow”. In all these cases it would be absurd to regard the thing that I say as a report of the performance of the action which is undoubtedly done – the action of betting, of christening, or apologizing. We should say rather that, in saying what I do, I actually perform that action. When I say “I name this ship the Queen Elizabeth” I do not describe the christening ceremony, I actually perform the christening; and when I say “I do” (sc. take this woman to be my lawful wedded wife), I am not reporting on a marriage, I am indulging in it.³⁰⁰

²⁹⁸ Lakoff, 1987; Johnson, 1987.

²⁹⁹ I could also speak not about utterances or words, but about signs as well, as they are also related to actions and obtain meaning in action. But as my main focus is language, I can consider signs (such as road signs, language of gestures, etc.) as a special case of language.

³⁰⁰ Austin, 1961, 222.

Indeed, sometimes we use language to do something. But should we consider language as a kind of action? I believe it is more fruitful to separate them. In fact, relating action and language the way Austin does evokes some concerns (and Austin himself is aware of many of them). Here I want to consider one of these concerns, related to truth. How can we account for falsity or lies, which can be the case in such situations? I can say “I apologize” with such a grin or Schadenfreude in my voice that it is absolutely clear to you that I do not apologize. Or someone can feigningly say, “I forgive you”, in order to mislead me and plan revenge. If saying and forgiving is the same, there can be no lies in such situations. But sometimes there are.

So there is a difference between what I say and what I do by saying it even in cases of “I forgive you” or “I apologize”. In such cases what I say can be false. But the action cannot be true or false. Thus, we have to find a place for truthfulness or falsity in such cases. To solve this issue I propose to consider language and action as bound together but still separate issues: in this case the act of saying is an action, and the linguistic part is presented by the words thus said. So I consider such a situation as an action that is performed using language.

Thus, my way of considering language differs from received approaches in making a claim that language relates to reality through action, but is to be considered as a separate issue. Saying something is action, but here language is presented in the words thus said. Thus, “what is said” is different from the action in which “something was said”.

8.2.3 The human role in language-driven action

It is evident that in order to render a language this way we have to emphasize the role of humans. Representation can be done just by a representing passive medium, but any action requires an actor. If language is connected to reality through action, we need to pay attention to the human using language to relate to reality. Language cannot act by itself. Language by itself, detached from action and environment, cannot contain knowledge and be a candidate for truth. According to the triangular approach to cognition I propose, language takes part in cognition only by cooperation with action and environment. So in order for an utterance to come to life there must be a capable actor.

But this emphasis upon the human actor does not entail relativism and subjectivism. In fact, as I have stated in the previous chapter, I consider humans inseparable from the environment with some distinct properties. This means that we have to account for these properties and the differences between them if we want to describe the actions following from a certain utterance. We can describe the whole situation of action execution upon some utterance to reveal the reasons for its failure or success. Thus, in this emphasis upon humans, I want to highlight the role of environment and action in

the processing of language. As humans are different and their *Umwelts* are not the same, there is no wonder that the results of their action upon some utterances differ. In chapters 2 and 4 I have stated the existence of such differences. Here my goal is to provide a useful account of these differences, their origin and ways of dealing with them.

If we consider language as a set of scripts for actions to come to life there must be an actor able to parse the sentences and capable of actions connected to these sentences. The actor makes a work of attributing, comparing, deducing, and physical acting in accordance with the predicates of the sentence (taken in a linguistic sense). So here we can put the relation this way: language is connected to reality through actions by humans, or humans are connecting to reality by the means of actions, shaped by language. This has several consequences:

1. The meaning of a sentence is dependent on a human being and his or her environment.³⁰¹
2. The condition of meaningfulness of a sentence is that there is a possibility of performing an action towards which a sentence can be directed (this includes mental acting).
3. A meaning is confined to human acting in a particular situation and environment.

Thus, if we consider meaning as confined to human acting upon some linguistic expression, we conclude that meaning depends on the particularities of the environment where this action is being performed. Thus, the diversity of understanding of meanings should be accounted for in terms of environment and action.

8.2.4 Meaningfulness in action and meaning in language-games

Additionally, in speaking about language I will use Wittgenstein's later philosophy, as he focuses precisely on the problem of language structure, truth expressed in language, and meaning. However, I am not going to accept the general attitude of some Wittgensteinian philosophers towards language as a single domain, within which we have to test our hypothesis about meaning and truth. So I will take only some of Wittgenstein's ideas as a starting point for the research.

As a beginning, we can consider the Wittgensteinian intuition of language-games and the metaphor of language as a river.³⁰² The metaphor of the river reveals the flexibility of language and its constitutive power. I need to

³⁰¹ Here I consider meaning from an individualistic perspective. Later I will add communicational issues of meaning.

³⁰² Wittgenstein, *Philosophical Investigations*, §§ 96–99.

add a concept of action to this metaphor: we have to consider the movements of the waters of the river to see how it changes the riverbed. The notion of action allows us to account for the dynamics of language. Language both drives our actions and is being changed by them.³⁰³ The notion of language-games also can be helpful in accounting for the way a meaning is being born by language. In fact, if we develop this idea in accord with the proposed triangle of cognition, we can see that the notion of language-games can be interpreted to be quite close to the notion of language related to reality through actions. Moreover, meaning is being born in actions and depends on the actions the persons take in this game.

One of the most important features of language highlighted by analytic philosophy is its communicational function. Wittgenstein claimed that private language and private meaning are not intelligible.³⁰⁴ The meaning of words and sentences is public and defined in the communication of social groups. From this point I will develop the Wittgensteinian metaphoric approach to language. Perhaps a good way of expanding a metaphor is by using another metaphor as well. So let us compare language with a currency. Every speaker of a language possesses this currency and can exchange it with other speakers for some goods. There could be some fixed prices, market values or the rates of exchange suggested by the banks, but these are not obligatory.

Language functioning is similar to that of money on the market. In the case of language it is the dictionaries that attempt to establish the equivalent of fixed prices; fixed prices are neglected and violated by the market all the time. The exact value of currency is established anew for each deal between two (or more) parties involved. It is these persons who come to the agreement on the rate of exchange they perform and what can be bought for this sum of money. In the same manner, an exact meaning of each word or sentence is established in each act of communication. Following the metaphor of currency, money obtains an exact value in the act of negotiation.

On the surface the game is seemingly played according to the rules – the exchange is done correctly, but this correctness exists only on the formal level of the rules of grammar and syntax. In contrast, on the level of actions the events taking place in the communication are different. Here everything depends not on the established dictionary meaning of the words, but on the particular environment where actions are unfolding and on the actors taking part in this process. Here the words find their actual value, uncovered in actions. The meaning of a simple expression such as “She is there” varies drastically depending on the environment. For example, my interlocutor may

³⁰³ Wittgenstein’s metaphor concerns language only: he speaks about hardened propositions, constituting a riverbed, and fluid propositions, which represent a flux of the river. But I propose to expand this metaphor, adding the concept of action to account for the dynamics of language.

³⁰⁴ Wittgenstein, *Philosophical Investigations*, §§ 244–271.

have an intention to distract my attention with this expression. Or maybe he intends to transfer some secret information using this sentence as a code or metaphor.

This utterance can also be a product of delirium. And I can respond by “not buying this”, or not getting this, or resisting, etc. All these peculiarities that constitute the actual meaning of this sentence depend on the situation and environment. Without access to the environmental and situational properties of the communicational act where an utterance is used we cannot figure out the meaning of it, and the syntax cannot help us here. Thus, I propose to expand Wittgenstein’s idea that “the meaning of a word is its use in the language”³⁰⁵ in this way: the meaning of an utterance or any part of it is its use for a particular action in a particular environment. Wittgenstein writes that “the speaking of language is a part of an activity”.³⁰⁶ I think it is necessary to add that this activity takes place in a certain environment, which is constitutive for that activity. Thus, meaning has not only to do with language, but also with environment and action.

But one can ask: is this “situational meaning”, including the subtle intentions and peculiarities of the actors, a real meaning? Perhaps we just have to clean the meaning of the words and sentences from all these contaminations added by situation and actors to get to the pure crystal-clear meaning? Aren’t there examples of “pure meanings” or invariances and exact values of the words in the dictionaries? And my answer is this: this question is based on a supposition of the representational nature of language. If we distance ourselves from this approach and follow the action-environment-language approach, we see that the tokens of language resist the attempts to fixate their normative “clear” value. Meaning does not work this way. The attempts to enforce normativity on language are vain, just as the attempts to establish prices once and forever. Speculations and violations appear despite all norms. There is no “paragon” meaning to be found in all the instances of word usage. For any given speaker each word is surrounded by some actions, identifying it. But these actions slightly or greatly differ from speaker to speaker, from environment to environment. People tend to use the word “stick” to convey a wide range of meanings – from a candy to a dried up flower, if they point at an object. We do something upon utterances, mentally or physically, and thereby get the meaning.

The exact meanings that we find in the dictionaries are just the most common examples of the actual usage of words. These meanings are placed in the dictionaries because speakers of the language use the words this way. But the speakers use the words in many other ways and do not have to obey the dictionary. And what is most important, the *dictionaries do not show*

³⁰⁵ Wittgenstein, *Philosophical Investigations*, §43.

³⁰⁶ Wittgenstein, *Philosophical Investigations*, §11.

how the words are to be used in action. The action aspect is never captured in a dictionary.

Moreover, the meanings change through time and from one social group to another. Just as Wittgenstein observed, the meanings and the language itself change in the same way that the flow of the river changes its bed. And I think that using the triangle model it is quite possible to find out possible correlations of changes in language to changes in environment and action. Changes in environment and actions influence changes of language. But I am not going to develop this point here, as this would lead the narration into a side direction.

Thus, I can conclude that the *meaningfulness* of language is provided by *action*, and that the *particular meaning of an utterance is bound to the exact communicational situation* and is brought about by actions in the environment, not by some mysterious “reference to reality”. So I propose a concept of language as primarily a communicational tool (in a sense of ready-to-hand), aimed at actions. Language is not directed to the world, being a kind of medium between humans and the world. Instead, it originates in humans and is directed to humans. Each instance of language, such as a word, a sentence, or a book, is produced by human beings and is aimed at being conceived by another (or same, which does not matter in this case) human being. Thus meaning and understanding of language are influenced both by individual and intersubjective properties. And consequently, the meaning is communicative and unfolds in action.

8.2.5 The enacted and embodied functions of language

I propose to distinguish two main functions of language, related to acting. These are:

- Focusing and directing the attention
- Guiding mental and physical actions

Of course, this division of functions is very crude and requires further refinement. But it is necessary for the main task of this work to sketch these functions. So, coarsely speaking, nouns are aimed at focusing attention, while verbs mainly guide our actions. Here I have to repeat again that the actions in question include not only intended acts, but also any kind of changes of environment (including human body) related to an agent. Our body can respond to some utterance without our intention: humans sometimes shudder hearing a word or name reminding of a traumatic event, or look above hearing, “Wow, it’s Stealth up there”, even if they had no such intention. Our body is intimately related to language comprehension, as was

shown by cognitive psychologists³⁰⁷, thus it sometimes responds to utterances without our consent. For example, in an experiment where humans were proposed to quickly grasp a wooden block with a word on it, reading a word representing a large object (APPLE) leads to a larger grip aperture than reading a word representing a small object (GRAPE), despite the fact that the size of the wooden block is the same.³⁰⁸ Thus, the actions are intimately linked to environment via our body. Language is “inbuilt” into our body, which allows it to shift our attention, evoke imagination, etc. When we read about a cat on the mat and a cat appears in our imagination – it is an action, a script whose expression is “a cat is on the mat”.

The functions of directing the attention and driving actions are in fact crucial and inseparable. In order to perform a skillful action upon some utterance, I need a structured space required for the action. I also need to focus on instruments or parts of my body required for this action, to be aware of their position and relations. Additionally, a skillful action must be done in a correct way; otherwise an action will not be successful. If I follow the utterance: “Take an apple from the table”, I need to find an apple on the table, to direct my arm’s movement, to grasp an apple with sufficient strength so I will not drop it, etc. How does language contribute to a skillful action like taking an apple? First of all, language contributes to the settling of the environment, if it is not present at hand. If an action requires more than just a verb, for example “Run!”, an environment should be settled. For any action we need a starting and ending point, and some space sufficient for action between them. We need “far” and “close”, for example. In the case of taking an apple from a table we need to attend to the environment to find what is called “table” and “apple” here. We have to start and finish our action, just as the utterance suggests to us.

The main function of language is to drive actions. But language only aids actions (and speaking is an action) and cannot substitute for it, just as a carving tool cannot substitute for the process of carving something. Therefore the attempts to connect language directly to reality encounter severe problems, which I have already mentioned in the overview of the representational approach to language. To come to reality through language we have to do the actions this instance of language requires. We have to act in accord with some utterance, or series of utterances. Moreover, these actions are to be performed in the environment suggested by a person who has produced this utterance. Thus, an additional part is introduced into this language-reality relation: an actor, producing an utterance and acting in accord with it (in the case of private speech this might be one and the same human). Thus, language is in fact unfolding in a process of action, performed by humans. The

³⁰⁷ McGurk and MacDonald, 1976; Glenberg, Havas, Becker, and Rinck, 2005; Glover, Rosenbaum, Graham, and Dixon, 2004, 103.

³⁰⁸ Glover, Rosenbaum, Graham, and Dixon, 2004, 103.

meaning results from a shared environment and shared actions, and is intersubjective at its core.

8.2.6 Inner speech as the clearest linguistic situation

So I am going to re-approach the idea of communication as a main aim of language. Language as a communicational tool requires at least two parts: someone to produce it and someone to comprehend it. Language in the form of utterances does not exist as some substance, like sand, from which we can extract the parts to observe and experience. *All the instances of language are produced by someone and have an addressee.*

But here I need to include an account of the language used for oneself, as in thinking. As it was stated in chapter 6 dedicated to the language, this kind of language usage is of great importance for cognition. This is how Mirolli and Parisi put it:

An important characteristic of human language, which distinguishes it from the communication systems of other animals, is that human language is used not only for communicating with others but also for communicating with oneself. Indeed, the use of language for oneself starts as soon as language is acquired, and represents a significant proportion of the child's linguistic production. Empirical studies demonstrate that 3–10 year old children use language for themselves 20–60% of the time.³⁰⁹

So here one can argue: what about inner speech? Doesn't it exist on its own, with no addressee? I would answer that there are definitely two parts in our flow of thoughts: we can both passively hear some thoughts as they appear (and this process is hardly controllable), and can as well speak to ourselves or knowingly produce coherent sentences. So there are some faculties in our mind, which provide both the speaker and the listener for our thoughts.

This allows me to present inner speech as the clearest linguistic situation, where there are no ambiguities or misunderstandings. The reason for this clarity follows from the triangle model. In inner speech all the particularities of the environment and all actions taken are present at hand, as these two peers of communication share exactly the same environment. So we can just neglect all the differences between the speaker and a listener, such as background, culture, age, intellect, competence, etc, which result in diversity of meanings and controversy. This is a situation where only language is bringing forth the action and conveys meaning.

One of the most interesting features of inner speech is that it often comes in separate words or short expressions, following no syntax.³¹⁰ Inner speech does not need to follow grammar, syntactical or any other rules making

³⁰⁹ Mirolli and Parisi, 2009, 523.

³¹⁰ Mirolli and Parisi, 2009, 525.

speech comprehensible at all. Nevertheless, it is still comprehensible and meaningful for the person, allowing acting, planning, problem solving, etc. I think this observation shows us the key role of environment and action in it for meaning and language comprehension.

When I have an environment identical to that of my interlocutor, I do not need to structure my speech at all. The environment where the words are evoking actions is already present at hand: it is my own mind and body states, my position in space and the action-script I am using at the moment. That is why using language for oneself differs from using language for social communication. In order to communicate something for another interlocutor I need to clarify the environmental features and the character of the action I want this person to take.

Let us consider an example of a truck blocking my driveway. It is enough to say to my friend, standing nearby and looking with me at the truck: "Where is this genius? Let him move this out". And I will be completely understood. But when I see an e-mail on a truck and write a letter to this address, I cannot just repeat the words I have said to my friend. Instead, I have to clarify who I am, what is the reason that I write, where the situation is taking place, and what I want from this person. And this does not guarantee that I will be understood: the e-mail address may be not of the truck driver, but of a call-center of a flower company which has put an advertisement on a truck. So the syntax, the coherency and completeness of sentences have a goal of establishing a fitting environment and fitting action in this environment. The further the environment and situation of my interlocutor are from my own, the more verbose and syntactically correct I have to be. I need to write clearly, sentence by sentence, with a good structure instead of showering the interlocutor with the flow of my thoughts.

This picture of functioning of private speech departs from the model that Mirolli and Parisi propose. Although they pay great attention to action, they are still attracted to the notion that language is mostly directed at objects and not actions. This is how they put it:

The simulation of private speech is quite straightforward. The network encounters an object and it responds to the object by producing the sound that designates the object using its linguistic sub-network. Then, the network hears the sound it has just produced and responds, using its sensory-motor sub-network, to the internal representation of the self-produced sound. Inner speech can instead be simulated as follows. When the network perceives an object, it does not produce any sound. Nonetheless, the sight of the object does induce the internal representation of the name of the object in the linguistic hidden units. In inner speech, it is this internal representation of the label associated to the perceived object that influences the non-linguistic response of the network.³¹¹

³¹¹ Mirolli & Parisi, 2009, 523.

But it seems to me that the situation of private speech is not that straightforward. The things of which we think and speak to ourselves are quite often not objects at all. We think about our plans, our past and future, we recollect emotions, we argue with ourselves about tough decisions and look for explanations. Moreover, the authors here are using the notion of internal representation, which is even less suitable for an account of inner speech about emotions and plans. So it seems to me that reconfiguring the situation of inner speech in terms of action and environment is more plausible. Here there is no need to represent something. The environment I live in is already at its place. My thoughts, my inner speech, only help to shift the attention and direct the action in this environment.

8.2.7 Written text as communicational

Thus, I consider any sequence of utterances or text as a communicational tool aiming at action. It is quite evident in the case of everyday conversations, especially those connected to performing joint labor. But what about utterances we find in books?

One can argue that language comes not only in the form of speech, but also in such forms as text in books or journals. And these forms seem to be excluded from communication, being an object of its own kind, not just a currency for exchange. They appear as “petrified” speech, with no addressee specified and the addresser absent. This is an instance of language rooted out of an actual communication act taking place at a certain time and in a certain environment. It may seem like there is only one active party – a reader, dealing with something objective – a text. In fact, in these cases communication is still present, but it is delayed. One part of this communication act has settled the environment, used the language to direct the actions of a possible reader, and left. So the situation of reading sometimes looks as if there is only one active part of a linguistic deal, and negotiation of the values of the words is absent.

But we can say quite the same about the author creating the text. As there are no communication peers yet, the efforts of the author seem to be directed towards the text itself instead of the readers. Thus, here we see the same departure from real-time communication. This has two consequences: first, the author needs to guess the environment of the reader and reconstruct it so as to evoke the actions he or she intends the reader to perform. Usually authors have some target audience they are writing for. For example, if an author is writing a children book, he bases on the presupposition that the environment of a reader does not contain taxes, sexual problems, and market rates. Second, it is not easy to restore the exact value of the words used in this communication act. As the communication is established and mediated by text, we try to ask not the author, but the text itself about the intended values, supposing its coherency. Language, used in books, is in some sense a

substitution and a support for the exact and close action-directed communication, embedded in a particular environment.

How do the processes of action and language understanding through action take place in reading? I think we can find almost the same case of structuring of environment by moving the attention and directing actions even in the case of books. The difference with everyday conversational speeches is not that radical and lies mostly in the precision and complexity of the environment and actions these texts are aimed at. The long and detailed texts of *belles-lettres* produce a very complicated space where a reader can take subtle actions and feel reactions such as emotions. An author creates a structured environment for the reader. In this environment a good reader uses the whole power of the text performing the actions as detailed visualization, rumination, attribution, imagining possible relations, etc. This kind of reader can even fill in the gaps and clarify the uncertainties of the text, inventing some events for explanation of the gaps in the plot or background of characters.

In contrast, a quick reader just sketches the environment, and performs coarse actions in it. Both of these ways of relating to the text (written or spoken) are actions. Beside these two, there are endless kinds of possible actions to be taken upon a text. For example, analysis of the text, cabbalistic search for hidden numbers, interpretation, attempts to map the text upon reality – all of these are possible, although rather intricate and sophisticated actions. But there is a common action that is taken by any person by default to any text perceived. It is the mapping of it upon the personal environment (embodied understanding) and acting performed according to the results of this mapping. We have some former embodied experience, related to the words and sentences we read. Everyone connects the meaning of words and sentences to his or her unique experience. We use our environment in order to comprehend the text (even if it informs about some far away environment) – this is what I mean by the word “mapping”.

Sometimes the mapping does not succeed, the actions fail and the text is seen as irrelevant or false. But for now I am going to focus upon successful recognition of a text only. Nevertheless, these forms of language-existence are not off-market. But what is special about them is that they are verbose and long enough to build their own environment. And even here the action is essential.

In the case of books the verbosity results from the necessity to settle the environment for actions. In the situation of real-time communication the communicating parties usually share the environment of action and have everything present at hand that is the subject of the speech. For example, a vet and an old lady speaking about a sick cat during an examination do not need to specify each time that they speak about this cat, having such and such properties, etc. The shared environment – the cat, the examination room

and the situation – all this adds everything necessary for the utterances to be understandable.

On the contrary, in the situation of writing a book I need to use the explanations and definitions to construct a space where the action is to be unfolded. The reader needs to know not only which language-game we are playing, as Wittgenstein might say, but also what the objects are that are involved in this play; who are the characters of the book; and what should be done during reading. The book helps to establish the environment of feelings, thoughts, goals, and opposites, where the attention is shifting and the actions, followed by the lines and rules of this environment, are taking place. The actions taken in a thus established environment have certain results: at least they result in the changes of our feelings and thoughts. Some of the necessary environmental properties are already known for the reader from the genre of the book, but the rest is to be settled by the author in all the possible details. Thus the reader will be capable of performing the actions the author intends him or her to do.

So the more distant my interlocutor is from me in a sense of my environment (in terms of bodily particularities, skills, language, social, cultural and other issues), the more work should be done to establish a clear environment where the actions I speak about are to be taken. For the faraway and totally unknown interlocutor as a probable reader of my book I have to establish the environment from the very beginning.

And now I wish to turn to religious texts. Religious texts are intended to evoke some physical and emotional actions (repentance, awe, prayer, etc.) and attach the reader's attention to some points and their constellations in reality. They intend to change human life and extend our attention beyond the scope of our current environment. Religions claim to propose another, true reality, which is external to the everyday reality. Thus, usually religious texts are quite long, as they need to build a very extensive and detailed space where action is to be taken, with the far away points and objects to which the attention is to be directed. As the objects the religions speak about – salvation, spirit, Hell – are not present in everyday life, a reader of religious texts needs to train the attention so as to distinguish them. The reader also learns to act coherently in this new kind of environment in relation to these religious objects. I will return to the issue of religious environments in the following chapters.

Thus, the main idea is that spoken and written language does not say something by itself. *There must be an actor composing this sentence in order to say something to someone.* And it is a capable actor who guards the meaningfulness of sentences and their relation to the world. Language itself cannot do this, just as machines cannot. So grammar structures, syntax, etc., are only auxiliary. They help to deliver meaning, but they do not have meaning by themselves, until used and understood by humans.

I will summarize all the above in the following explication of meaningfulness and particular meaning of a given utterance. **Action** provides meaningfulness and realizes the intentionality of language. Any particular instance of language needs to be acted upon to obtain meaning. The possibility of such an action makes an instance of language meaningful. **Interaction** between humans, which can also be named action in communication, realizes particular meaning. In communication, people evoke various instances of language, using them as tools to help various actions to take place. Thus, what meaning is attributed to the word or utterance depends on a particular interaction between humans. So both the action-based and communicational nature of language contribute to meaning.

8.3 Action

To act in a traditional sense, I have to be in control of that which is involved in acting. But I am not in the position of control of lots of things involved in any simple action: I cannot control the low-level functioning of my body, such as the transmission of signals from one neuron to another. For example, the spilling of coffee is a frequent and absolutely natural action. It results from the functioning of the same faculties that take part in a successful and intended grasping of a coffee cup. Thus, we have to take into account of action the constitutive parts of the environment, including non-personal levels. Action is embodied and takes place in and via an environment. And as we are never in total control of all the parts of our environment, our actions sometimes suffer from the same lack of control. As we have seen in the explications of the enactivists, the cognitive action inevitably includes the non-personal levels, such as neuronal and muscular activity.³¹² Thus I propose to expand the notion of action in order to account for such lower-level functioning and its impact upon actions. I suppose that actions take place in an environment in accord with the possibilities of this part of the environment to be involved in action (neurons firing, an agent making decisions, cells splitting, air inhaled, etc.), that actions pierce the personal and non-personal layers of the environment.

I consider as an action the *changes in environment causally related to an actor*. The result of an action depends on the actor as well as on the possibility of the action in a given environment. Or we can just say: action depends on the environment, as the embodied actor is also embedded and situated. Thus, we can erase the actor-environment divide. The embodiment of the actor denies the idea of the situational equality of actors. The agent is not transcendental: the environment constitutes the possibilities of action. Thus, the actions upon utterances are dependent on environment and are embodied

³¹² Bruun and Langlais, 2003, 37.

as well. Actions are guided by language that in turn affects the character of actions and perceptions (as we have seen in the examples of the Whorfean idea of language shaping our picture of the world³¹³).

An action is tightly bound with an environment. In fact, any action requires an environment to take place. Consequently, as the actions are constitutively based upon the environment, the properties of the environment affect the action taking place. As I have claimed above, I include into the notion of the environment the body and physical reality as well as cultural, intellectual and instrumental issues. Hence, the changes in any of these issues involved in action may lead to changes of the results of action. Consequently, the action upon the same utterance in various environments may lead to various results, and – which is crucial for the aim of my investigation – to various conclusions about truth and meaning of the utterance.

A phenomenological notion of coping with environment can be invoked here to show how action is embodied. As our actions are embodied and embedded, we need some parts of our environment to be used as a tool for action, and the other parts to be used as a target or space of action. To deal with the environment, we use some parts of the environment (including our body and skills) as tools in a Heideggerian sense of ready-to-hand. Moreover, these parts may disappear from our experience in order to become an embodied tool.³¹⁴ We do not merely “link [our] intentions to different elements in the world”, but these elements are constitutional for our actions.³¹⁵ Thus, actions are intimately linked to the environments where they take place. This has important implications for considering experience as justification. As experiencing also is possible only with and via some environment and human embodied actions, the particularities of environment and action can make decisive changes upon experience. And the conclusions we make are also affected. This might seem relativistic, but my aim here is to show that we cannot get rid of our embodied and enacted limited predicament: we have to take it into account. What we do and what we cognize is situated and embodied.

There are actions that can be taken by anyone with the same results given the same environment. Such actions belong to the domain of physical reality, for example: I can throw a rock and see how it falls. Some actions cannot be performed by one person at the same time or even consequently. We cannot jump and lay down at the same time, for example. Moreover, some choices of actions make some other actions impossible: by choosing a religion we

³¹³ Whorf 1956, 213–14. Bowerman and Choi, 2001 and 2003.

³¹⁴ Here I use Leder’s idea of the disappearing of sense organs from the perceptual field they disclose. (Leder, 1990, 14) Leder speaks of bodily organs, but I think this idea can be even more fruitful if we extend it to other things we skillfully use as tools. Just as taste buds disappear from the perceptual field in order to allow the taste of an apple I eat, a gamepad disappears in order to allow perception of moving in a computer game I play.

³¹⁵ Bruun and Langlais, 2003, 31.

choose a whole way of life. Religion provides a holistic environment and interconnected scheme of actions, discriminating specific objects and the kinds of actions upon them. Religion tends to embrace all the aspects of our life, disallowing the actions that are incompatible with those it prescribes, considering these as sinful or inappropriate. Thus some choices of actions are incoherent with other ones. But multiple agents can perform incompatible and incoherent actions simultaneously (as the proponents of different religions do).

The human is inbuilt in the flow of changes in the environment and acts within this flow. It is language that allows us to cope with the flow of changes and with infinite possible choices of actions. Our body and mind can perform endless types of actions, but we cannot do all at the same time: due to our finiteness and limitations we have to choose only some. Language provides a means of choosing the particular actions and sequences of them leading to a certain result. Even math formulae show possible actions to be performed by us: we act in a specific environment settled by math rules and objects. The objects of our actions in math are digits and various algebraic objects, and the actions are various calculations.

An array of possible linguistic constructions is as infinite as an array of possible human actions is. When we learn something new, we learn the possible types of action that can be performed upon a certain part of the environment. Some domains such as math require not only learning of the new kinds of action, but the establishment of a whole new environment with its specific structure and rules. Thus, new knowledge contains the ability to distinguish certain parts in reality, to attract the attention to them and to act upon them. Spoken language is intended to direct us towards possible actions and known objects. So language in action does not artificially construct reality, as strong social constructivists suppose. Instead, language allows us to interact with reality, although conceptualized, to relate to it.

Moreover, there are findings of neurophysiology suggesting that action is a basis for intersubjectivity and shared perception. There are some parts of our cognitive apparatus which function in a reflective manner, allowing us to mirror the actions of other humans. This phenomenon is named “mirror neurons” and was first discovered in experiments upon monkeys. Neurophysiologists Giacomo Rizzolatti, Luciano Fadiga, Leonardo Fogassi, and Vittorio Gallese observed that neurons in the anterior intraparietal area and in the ventral part of the frontal premotor area which responded when a monkey performed an action also responded when the monkey observed another monkey performing an action.

Later experimenting with humans they found that motor-evoked potentials were selectively enhanced when the participants observed the experimenter grasping objects.³¹⁶ Based on this result, they suggested that there is a

³¹⁶ Fadiga et al, 1995, 2608–2611.

brain system that is sensitive both to action observation and to execution in humans. Based on this suggestion, the researchers discovered a neurological circuit that was capable of transforming action observation into action execution.³¹⁷ It is action by other humans that we can reflect. So in the process of cognition it is our and others' actions that enable knowledge sharing and intersubjective transmission of known acts. Language is functioning here as a tool helpful in directing actions and memorizing them, but not reflecting anything in itself. So we can say that it is our action that is to be reflected and mirrored by others, thus constituting the space of intersubjectivity.

8.3.1 Attention as action

One important part of my argument is that attention is also a kind of action. I have to linger upon the issue of attention, as its functioning as a constructive action is very important for this topic. The importance of attention in perception was stated by Merleau-Ponty. Here I am going to follow his account, considering attention as "constructive" or even "creative".³¹⁸ Merleau-Ponty proposes that attention does not simply highlight some features already present in our perception. The world does not present itself for us as already naturally and correctly conceptualized and divided into objects and relations. Instead, the process of perception constructs the objects that we attend to and conceptualize as the reality for us. Instead of illuminating pre-given structures, attention "articulates figures out of indeterminate horizons".³¹⁹ As Merleau-Ponty claims, "attention first of all presupposes a transformation of the mental field, a new way for consciousness to be present to its objects".³²⁰ Thus, attention constitutes its object and is an active process, structuring the environment. That is why, following Merleau-Ponty's claim, I consider attention as an important and constructive action.

Attention is moving, but we do not perceive its motion. We just notice the changes in our environment that this motion produces. We perceive the changes, but not the motion that produces these changes. Our attention is moving as well, when we read a book or listen to a speech. It brings us to distant places and times or to the core of atoms. In our conversations with others or even in our silent conversations with ourselves we may suddenly find ourselves in anger or in happiness – these are the changes in our environment produced by shifts of attention inflicted by language.

Thus, attention is moving in our environment. What is special of attention is its ability to move freely in any environment. We can see in the example of attention how the environment can be permeated by action. I can focus

³¹⁷ Craighero et al, 1998, 109–125.

³¹⁸ Merleau-Ponty 29.

³¹⁹ Merleau-Ponty 30.

³²⁰ Merleau-Ponty 33.

my attention upon any part of my environment: on my skin, my headache, the air I breathe, the contours of a bird in the sky, the shelf in the corner, some vague point on the horizon. Some religious practices, such as Buddhist meditation, even allow people to train their attention so as to perceive the movements of the diaphragm in breathing or of digestion. In this sense attention has no limits: we can direct it both to our left toe and to the first five minutes after the Big Bang. The only thing attention needs is a cue or carrier. Linguistic structures are often used as such a cue.

There are no limits for attention. It moves freely through time and space, existence and non-existence. In the process of upbringing we learn to direct our attention intentionally and focus it upon various things. We can learn to focus our attention and act upon religious words such as “grace”, “sinfulness”, “reincarnation”, or “impurity”, just as we can learn to focus our attention upon such words as “law”, “honesty”, or “algebra”.

Embodiment is crucial for actions: in repetitions we can train our body to perform some actions automatically, without additional attention from our consciousness. Embodiment allows remembering of the way we perform actions so as to perform them again and again in different environments. In fact, if we develop the idea that skillful action can become embodied to the extent of automatism, we can see that there is a difference between two kinds of actions. The automatic embodied actions differ from language-driven actions, directed at the parts of the environment that are not ready-to-hand. Thus, walking is an embodied skillful action that does not require much attention, goals, or space. Our body “unpacks” walking in a series of almost automatic actions of our body. We know a lot of these kinds of actions.

As a matter of fact, society has built an enormously compound environment. A skillful action in it requires a lot of training and learning. For example, to perform such a skillful action as playing chess, we have to know a lot of things. We have to react adequately to the events, to be in the right place at the right time.

Training and learning of a specific action leads to the ability to perform it in other environments (such as in imagination, in other places and times). We can repeat the learned actions even without necessary instruments or an environmental situation present at hand: we can, for example, imitate grasping of a cup. But when we just recall and repeat actions without the necessary instruments and a fitting environment at hand, our actions are not that precise and are even mistaken at some points. They are still very close to what we do with the real mug, for example, but have certain faults in them, such as, for example, inadequate opening of a hand. The recent research of Goodale, Jakobson, and Keillor have shown that there are measurable qualitative differences between grasping movements directed at an actual object

and “pantomimed” movements directed toward an imaginary object.³²¹ This is how Kelly summarizes these results:

When an actual object is present to be grasped, there are certain characteristic actions that subjects are seen to perform in the act of reaching for the object. For instance, among other things subjects typically scale their hand opening for object size and form their grip to correspond to the shape of the object. In pantomimed actions, on the other hand, when there is no object present, although the subjects continue to scale their hand opening, their grip formation differs significantly from that seen in normal target directed actions.

This empirical result is interesting not only because it confirms the intuition that a genuine grasping act depends essentially upon its object, but also because it gives us some sense of the ways in which, in normal situations, the grasping act embodies a motor intentional sensitivity to that object. In normal circumstances the act of grasping a coffee mug is from the start scaled and formed in such a way as to take into account a multiplicity of aspects of the mug including, among other things, its size, shape, orientation, weight, fragility, and contents. It is only in virtue of its sensitivity to these aspects (among others) that the motor intentional act – grasping the mug in order to drink from it – can succeed.³²²

A similar thing could be said of actions performed on absent things, as in thinking. Thinking is a kind of “off-line” cognitive action, as it usually considers things and environments that are not present. But the proponents of the embodied approach show that even off-line cognition is based on the same embodied mechanisms. The idea is expressed this way: “Even when decoupled from the environment, the activity of the mind is grounded in mechanisms that evolved for interaction with the environment – that is, mechanisms of sensory processing and motor control”.³²³ Here we perform very similar actions, but as the environment is lacking, we often make mistakes, coming to the wrong conclusions and predictions, or receiving incorrect results upon calculation. So, *it is our embodied actions that we can recall, combined with linguistic tools that constitute the ways of our thinking*. And finally, we can see here how strongly language, action and environment are interrelated in cognition.

8.3.2 Actual instead of conceptual schemes

As I propose to conceptualize language’s relation to reality by means of action, I must also reconsider the idea of conceptual schemes. The notion of conceptual schemes plays an important role often for philosophers conceptualizing language’s relation to reality. Thus I have to evaluate how my pro-

³²¹ Goodale, Jakobson, Keillor, 1159–1178.

³²² Kelly, 2001, 84.

³²³ Wilson, 2002, 626.

positional for the relation of language and action affects the notion of conceptual schemes.

In order to provide an action-based account of conceptual schemes, I am going to use the same strategy that Lynch is supposing in his evaluation of Kantian, Quinean and Wittgensteinian models of conceptual schemes. Lynch's strategy is centered on these questions:

1. What are the primary components of the scheme?
2. What are the criteria of identity for schemes?
3. Does the model require analytic/synthetic or related distinctions?
4. What is the structural nature of a scheme?³²⁴

Lynch provides an ingenious account of conceptual schemes in his book *Truth in Context*³²⁵ and in a paper, "Three models of conceptual schemes"³²⁶. So I will first briefly repeat the evaluation I made of the aforementioned models in chapter 1, and then propose my own version of conceptual schemes. Quine relates conceptual schemes to languages. From a Quinean point of view conceptual schemes in fact consist of sentences.³²⁷ Wittgenstein uses the metaphor of a river of language and riverbeds of hardened propositions, which shows how our language and concepts change.³²⁸ And finally, Lynch attempts to combine the best of the Kantian and Wittgensteinian models, developing the Wittgensteinian notion of worldviews.³²⁹ According to Lynch, conceptual schemes are themselves parts of an organic whole that he calls a "worldview". Here I can add the idea of the image schema introduced by cognitive linguists.³³⁰ The notion of the image schema accounts for embodied understanding of language and structuring of the experience. The image schema consists of pre-conceptual patterns, such as "OBJECT", "FORCE", etc., which arise from everyday experience. In a sense, this idea continues the Kantian way of thinking, categorizing the a priori concepts we use.

Thus, I will first answer Lynch's questions to identify the key features of an action scheme.

1. The primary components of the scheme are actions centered on some wordings. The scheme is based upon the words, but the logic of their *relations within the scheme* and their identity are based upon

³²⁴ Lynch, 1997, 33.

³²⁵ Lynch, 1998.

³²⁶ Lynch, 1997.

³²⁷ Quine, 1981, 41.

³²⁸ "The river-bed of thoughts may shift. But I distinguish between the movement of the waters on the river-bed and the shift of the bed itself, though there is not a sharp division between one or the other." Wittgenstein, 1969, 15e.

³²⁹ Lynch, 1998, 51.

³³⁰ Johnson, 1987, Lakoff, 1987.

actions. The actions determine which words will be used as bearings. Hence, to distinguish one scheme from another we have to pay attention to the action a human being takes and the words he or she uses. The words or utterances usually play an important role, but they are not essential for this kind of scheme.

2. There are several main criteria of identity for action schemes: A) The scope of a scheme: the space and objects involved in it. B) The starting point and the end of a scheme (we start our actions at some point and identify the completion of actions). C) Opposites or tensions (high–low, few–many, etc.) and the goals of a scheme.
3. The analytic/synthetic distinctions can be applied if we distinguish the environment where actions are taken as a space with certain rules. Some environments, such as math, have inner rules. When we act in this environment, we have to obey the rules. But as in the Wittgensteinian account, rules guide actions, but actions may eventually change the rules.
4. The structural nature of a scheme I propose requires us to distinguish the separate action-scripts that can form constellations – the action schemes. An action-script drives a simple singular action, while an action scheme involves multiple scripts. We can distinguish the structure of the scripts, as they are centered upon a certain goal, word or object. The structural properties of schemes are based on the logics of human actions. As human actions are dynamical, we also can distinguish the beginning and end of an action-script, and the nodes with tension between them, as I suggested in the criteria of schemes. The words or utterances are used as a bearing for actions.

An idea of action-script aims to clarify how utterances and words are related to our actions. In introducing this idea I want to show that the words and utterances have some inner connections. For this reason any word should be considered in the context of the action-script where it appears. Let us consider, for example, a simple action-script, “cooking a dinner”. This action-script has a scope, relevant objects, starting and ending point. There are specific words and actions related to this script, which allow us to identify what a person is doing, such as for example when a child imitates cooking a dinner. We can distinguish an oven, food, tools for cutting, etc.

When we are acting upon this script, we can turn some available objects into the tools required by the action-script: for example, to use a heavy book to crack walnuts, if we are currently cooking and need something heavy to crack walnuts. This action-script “cooking a dinner” can be performed in various environments, using various objects (such as a book). But the envi-

ronment where we act in accord with an action-script has some inner rules and circumstances (there may be no nutcracker in the kitchen, for example), which might hinder the execution of the action-script. Additionally, an action-script accounts for our situatedness. We always are in some kind of situation, doing something (even being idle requires doing something – to lay on the bed, to deny proposals to do something, etc.).

The actions, connected to utterances, can function as the guidelines of cognition I have written about in chapter 5, dedicated to empirical findings. If we perform a script “looking on a street for a lost dog”, we notice all the objects which look like dogs, but can overlook our friend or Santa Claus even if they come right to us.

Due to their connectedness to actions and not objects, the action-scripts are quite flexible. Thus, they can result in seeing and perceiving the same things in different environments. For example, a human can distinguish the same prayer action-scripts in varieties of prayer. On the part of language, action-scripts are expressed by the words and utterances. On the part of action, they are expressed by the series of actions having a clear beginning, an end and a goal.

I propose to replace the notion of the intentional as an object with the vision of the embodied *structures in our minds that are related to actions and are bound to the wordings*. We do not only have a representation – some visual image – of an apple, but the word “apple” is surrounded by actions we could take upon it. When we have an image of an apple, it is already placed in a network of possible actions. We know what we can and cannot do with an apple, and also we have some paradigm of action: we eat apples. In our everyday life we are not interested in the sorts of apples, molecular structure, and number of seeds in apples. The reason for this is simple: we do not perform actions directed to these characteristics of apples.

So the properties or parts of reality we do not act upon are not present in our action-scripts and are transparent for our other actions. I do not notice that the apple is infected by an apple-virus and this property does not affect my eating of the apple. I do not believe in ritual impurity thus an apple touched by menstruating women does not appear impure and dangerous for me. But for an Orthodox Jew this property of apple will be almost palpable and prevent him from eating an apple touched by ritually impure women.

In the same way, a biologist doing research on apples easily identifies the viral infection of an apple, and treats this apple differently than uninfected ones. Here we see the great importance for perception of action, as Noë discusses.³³¹ Experience of the world and things does not happen to us. Instead, it depends upon our action in the word and upon the things in it. Therefore I think it is reasonable to say that *the properties of objects are identified by the actions related to these objects* rather than, so to say, real properties of ob-

³³¹ Noë, 2004, 216.

jects. It is in action where we determine what kind of properties a thing has. For example, a book can be heavy enough to kill a bug, but too light to be used for powerlifting. Heaviness or lightness is not a genuine property of a book; they are related to the action in which the book is used.

Identification of an object's properties and of the object itself depends on how the object is placed in a scheme of our actions. The real apple as we experience it results from the actions we take upon the piece of reality the word "apple" directs us to. It depends on whether we use an apple for cooking dinner, for virus investigation, or to collect to sell. In all these cases the apple is perceived differently, because some properties of an apple, such as its molecular structure, are revealed in the action, while others (such as, for example, the smell of apples in the sack) remain hidden. The reality is capable of revealing various properties depending on our actions. And it is actions and their results that form what a word is directed at.

So I propose to consider actions connected to language as the primary components of a scheme. It is the actions and their properties that form the structural connections of the scheme. *The nodes of the scheme and movement within the scheme are structured following the logic of sequences and possibilities of actions.* Action is a criterion of identity of the actual scheme. As actions are guided by language and perception, we can sometimes trace different schemes by the wordings concomitant with them and by the objects these schemes discriminate in the world. But at the same time, actual schemes can be disguised by the peculiar usage of language.

The holistic nature of a scheme is rooted in the necessity for a human being to act in a holistic way. We need holism in time and space. This holism is centered on the particular human being. But the diversity of human beings explains the diversity of schemes. This diversity is limited by the necessity of the group to build a working distinguished environment.

8.3.3 Unexpected results and transparent objects

As I have depicted the nature of action-scripts, let us now consider the way they function in our lives. The action-scripts play an important role in our interaction with the environment and in maintaining its consistency and constancy. We act upon some things considered as objects in the environment, with special action-scripts attached to them in our language, actively expecting some results. But the world, including our own body, can respond in an unexpected way. We can accidentally spill coffee, or contract a rare disease in a jungle. But the result, strictly speaking, does not matter for the initial act. The initial act had its own object and action-script, including expected results. If some results are unexpected, it means that a person acted in an environment with different properties than the person knew. Thus, in the case of unpredicted results of action a person usually makes a revision of her

environment: she changes her evaluation of her own dexterity, or looks for a description of the new infection.

The way action-scripts affect our action and knowledge of the world is best seen through a comparison of the behavior of children and adults. Small children do not have action-scripts yet, as these require a lot of training to obtain; therefore small children apply deliberate actions to the parts of the world they encounter. They, just like young animals, strive to touch, smell, taste, and throw anything. They do not recognize the objects in their environment as relevant for action-scripts: for example, the objects required to have some rest (sofa, pillow, blanket, etc.). They approach and address everything that is along their way – stones, insects, leaves, parts of their own or somebody else's body.

In contrast, adults already have action-scripts mapping reality and helping figure out the significance of a situation and the actions this situation requires. That is why they behave in a certain way, never trying to taste things that are inedible, for example. Action-scripts minimize the action, focusing us on the actions necessary for survival and required by culture. But at the same time, action-scripts shrink the world, cutting off a greater part of the information and perceptions available for senses. They make our *Umwelt* very structured and predictable, but quite poor. Thus we, as adults, are engaged mostly in actions that are necessary. These actions, due to their predictability, do not quite expand our knowledge of the world. Our action-scripts bring us the information relevant for executing these scripts, cutting off the rest.

We interact with our environment through action-scripts. Let me describe a general situation any person finds him- or herself in. There is a body that I perceive as a starting point of all my actions and perceptions. This body is an extremely complicated thing, allowing endless kinds of actions, both on and with its own parts, and with and on things in the outer world.

There is some area around me, filled with many various things. Let us suppose that this area is a working room. The question is: why do I sit here using this keyboard to write instead of doing another one of millions of possible actions in this room? Why don't I sniff the walls of this room, inch by inch? Why don't I dance? Why don't I break open this keyboard in order to investigate its inner structure? Why don't I imagine that there is a demon inside the computer and start to read prayers in order to expel it? All of these actions are possible and could be rational for certain situations.

There are also many various actions we consider as irrational in some situations and contexts, but which are still possible. So how do I manage to choose only this kind of action I am performing now? The answer I give to this question is simple: I am fulfilling a certain action-script, which has its beginning and end, its goal and objects that it centers my actions on. I identify the keyboard and a computer display as the tools for fulfilling an action "writing a book". As this action does not involve the walls of my room, they

are a sort of background of which I can hardly say anything: what their color is, whether there are cracks in them, how they feel when touched, etc. In a similar way, I could perform this action in lots of other environments, which would be equally transparent for this action, as the action-script keeps my attention within the nodes “text” and “writing tools”.

The action-script maps the environment for me, cutting off for instance the intricacies of a keyboard that could be investigated by breaking it down. It also makes the room in its complexity transparent for me so that I do not perceive it or even notice its presence when I work on my text. Lots of things in the room turn into an indifferent background for the area where my action is taking place. For me in this moment the walls are not solid things with certain smell, surface and color – they just exist.

The reason for this is simple: the walls are not present in my action-script, thus I did not act upon them and consequently had no perception of them or their properties. My action-script does not bring my attention to the walls and their smell, even if I write here for 5 hours. Then it is not legitimate for me to describe the situation by saying that I was writing in a room with walls having such and such properties. The situation should be described differently. It is necessary to account for this property of walls “disappearing” into the background of my action. I call this characteristic of everything that is not part of a current action-script transparency. This approach helps us to distinguish between the whole language a human being possesses and the part of language that is relevant for a particular human's acting.

The actions usually do not take place chaotically. Instead, they are bound into sequences. What I call action-script is a structure consisting of nodes and tensions between them. The nodes are centered upon certain words. And the tensions are provided by actions directed oppositely; here by opposition I mean that they cannot be taken at the same time. For example, I cannot both go here and there simultaneously. It is impossible to lie down and stand up at the same time. These tensions between “here” and “there”, “up” and “down”, etc., create the possible directions of action.

The nodes, presented by nouns, form the end directions of the actions. The action cannot be directed just down. It is down to the ground, or down to the chair or down to pick up an apple from the ground. Here I can recall the idea of the image schema from Lakoff, Johnson and others.³³² The image schema is an embodied structure of experience that underlies the mapping of language. The idea of the image schema is close to the notion of an action-script, as it is also provides some embodied guidelines of cognition. But I propose that the action-scripts are more tightly bound to language, are rather flexible and can be reflected upon.

From the perspective of cognitive linguistics, image schema functions on a pre-conceptual level, as the Kantian idea suggests (but not on the a priori

³³² Johnson, 1987, Lakoff, 1987.

level, of course). I believe that we can deal with action-scripts on a conceptual level as well. We can try on various action-scripts, extending our instruments and the limits of cognition. As our body is a part of the environment, it can be conceptualized and used in various ways as well. World religions show us that we can apply the concepts of pure and impure to bodily parts, as in Judaism, find specific force centers or chakras in the body as Hinduism suggests, transform our bodies into vessels of salvation, etc. Thus, I do not stipulate some unchangeable schemes of our cognition.

8.3.4 Meaning and truth in action

Very often we can grasp the meaning of a sentence but not act upon the sentence and therefore not hold it as true. Let us consider the possibility of grasping the meaning while unable to act on the following examples. Someone says to me: "Look! There is a ghost in the dark corner". Here my actions will consist in an attempt to focus my attention as the words "dark corner" require. I will strive to adjust my vision in order to see something that I can relate to the word "ghost" in the corner. But the attempt to do this may fail, thus I will be convinced that this is not true. Indeed, the reasons for my failure may be different on the part of the environment: the corner is too dark, I do not see well, the interlocutor is just joking, by "ghost" she means a form of a shadow. Nevertheless, here the inability to act in accord with the utterance leads to a conclusion that this utterance is not true, although I was able to grasp the meaning (even if not in accord with the meaning put to the phrase by my interlocutor).

Another example concerns a description of a simple math operation, such as 2×2 . It is quite obvious that the teachers of math, checking pupils' exercises, need to understand even wrong calculations, such as $2 \times 2 = 5$. In this case she needs to perform some mental action. Here the environment differs from that of the ghost in a corner example. In math I must relate my actions to a special environment with certain rules and nodes. Surely, in order to act I need to know a bit of math, as otherwise I would have no environment to relate my action to. In math the rules of the environment disallow 2×2 to be equal to 5. When I perform an action, following this expression, it is not successful in terms of the environment where I act. Hence, since I can understand which action this expression demands from me, I cannot do otherwise than hold it as wrong.

These two examples explicate various actions that we perform upon the utterances in order to understand the meaning of them. But here one can ask: how do we know which action to perform to obtain the meaning? And here the action-scripts and the issues of communication and environment give us an answer. As I have already stated, we are always in a certain situation, doing something. The environment we live in is conceptualized for actions, thus we know what we are supposed to do in the shop, on the tennis court,

when we see a neighbor, etc. Moreover, communication establishes multiple possibilities of actions and what Wittgenstein calls language games. Meaningfulness is provided by action, while the exact meaning is determined in the situation of communication (here we can recall the example of money value established in negotiation that I propose in chapter 8, section 2.4).

If we look for applications with religious environments, we may consider the example of an atheist acting upon the expression “God exists”. An atheist is not capable of achieving the focusing of attention in accord with a word “God”, because it is presented within a religious action scheme. There is no such object in her *Umwelt*. Therefore she is incapable of relating the demanded actions, such as prayer, awe and belief to the part of reality this word is directing her attention to. There is nothing in her *Umwelt* that is compatible with the demanded actions, thus an attempt to direct an attention in order to find this in her environment fails. So the atheist can do such actions as imagining, as we can do it with fictitious characters, attributing to them some imaginable properties, but the attempts to act upon the expression as it requires fail. The environment the atheist lives in does not allow the existence of God, just as the math environment does not allow $2 \times 2 = 5$ to be true.

8.3.5 Action in the mental environment

The movement of attention cannot be hindered by differences of environment. But the actions are specific for the kind of environment they take place in. For example, we cannot mentally visualize something in a material environment. Our mental environment allows different actions. It repeats the same actions we can take in the solid environment of the world around us, but allows much more, as the objects in our mental environment are malleable for the actions of our imagination. These objects are constituted by our language and experience.

I want to emphasize that there is no need for the notion of representation when we speak about mental and linguistic actions. The actions can be directed at any object available, if it is suitable for this particular action. If I hear the words, “The cat is on the mat” from my interlocutor, I do not create a mental representation of cat, mat and the action of being-there in order to grasp the meaning of this sentence. Instead, I normally take this as a message to me and I try to find that cat somewhere nearby to see it.

In this situation a word “cat” is something I know, which means that I have an array of experiences centered on this word. My attention was directed formerly to some part of reality with the usage of this word. Perhaps I had a pet cat in my childhood. I have already directed some actions towards the thing named cat: I had looked at it, fed it, touched it, and picked it up. Consequently, I have had some perceptions resulting from my actions. As a result, now I know how a cat looks, how heavy it is, how it behaves, etc.

Probably, I also have some emotional reactions connected to cats: I may love cats or fear them, depending on my actions and perceptions. Thus, I do not need a “representation” of a cat in order to find it on the mat or understand the meaning of sentences about cats. I just need my trained attention to discriminate the cat in the room, and my memories connected to the cats I have experienced so as to evoke the actions applicable to cats and perceptions resulting from such actions.

But in order to act upon something mentally we need to fill in the gaps resulting from the fragmentation of our perceptions and experiences. Here I mean, for instance, the problem of perceptual presence, which was considered in chapter 4 dedicated to the observations of phenomenology. As was shown by phenomenologists, we perceive the cat sitting behind a picket fence as a whole cat, and not as the separate parts of it. The same presence of things in our perception takes place in various instances, such as perceiving the evenness of the color of the car, experiencing the whole bottle we hold with the eyes closed, and not only the parts we touch, etc.³³³ There are some mechanisms of perception which keep consistency of perceived objects and world. I do not want to go into great lengths at this point, as this problem requires separate research. Thus, I will mention only two such properties helping us to keep the perceived world consistent and whole. Thus, as I propose to consider the action-scripts as the guidelines of our action upon the world, I suggest that it is the property of action-scripts that accounts for perceptual presence.

Thus, I consider two main features of the action-scripts having to do with perceptual presence. The first one can be called a **guideline of an action-script**. We usually do not approach things from all possible perspectives. We see only one side of a building, a part of a car hidden behind trees, etc. But we do not perceive any gaps in our knowledge about a building or a car: we can say quite surely that the hidden part of the car is of the same color as its visible ones. How do our perceptions turn out to be complete and without need for additional examination of the parts and properties we have not perceived? I propose the following solution, based on the Husserlian idea of intersubjectivity in shared perception.³³⁴ From the perspective of the triangle model we can infer that consistency is built in our environment, as we humans create, conceptualize, and approach it in action. As we first of all recognize the objects in accord with the action-script we use, we address these objects with certain actions, and a possible range of actions in this scheme is also present in an object profile.

The second main feature is the same mechanism we find in the linguistic feature of metonymy: it is the **distribution of properties** to adjacent parts or to anything we relate to using the same word. If I see that the rear of a car

³³³ Noë, 2004, 60.

³³⁴ Husserl, 1973, 289.

otherwise hidden behind trees is painted green, I distribute this property to the whole thing I name “a car”.

These two mechanisms allow us to avoid the gaps in perception and knowledge. But at the same time they hinder further exploration and hide the gaps in knowledge. If I distribute the property of “badness” to all Muslims, this has twofold consequences. On the one hand, my picture of the world is complete so that I feel no urge for further exploration of the moral qualities of Muslims. On the other hand, this picture is too generalized and therefore will be challenged when I encounter a good Muslim. Additionally, my actions towards Muslims will be shaped by my notion of “badness”. This notion is surrounded by actions and the expected perceptions. I must expect lies, treachery and similar things from bad people. So when I perceive a good deed by a Muslim, I render it as treachery intended to beguile me. Thus, it becomes difficult for me to experience goodness in relation to a Muslim. This is a rather extreme example, but it reveals the guidelines of the way we distribute properties in our cognition and action. That is why we so often can be mistaken presupposing the properties or events in reality on the basis of our mental actions only.

This approach to the action’s functioning in knowledge is close to that proposed by James. Surely James was right in saying that:

We plunge forward into the field of fresh experience with the beliefs our ancestors and we have made already and these determine what we notice; what we notice determines what we do; what we do again determines what we experience; so from one thing to another.³³⁵

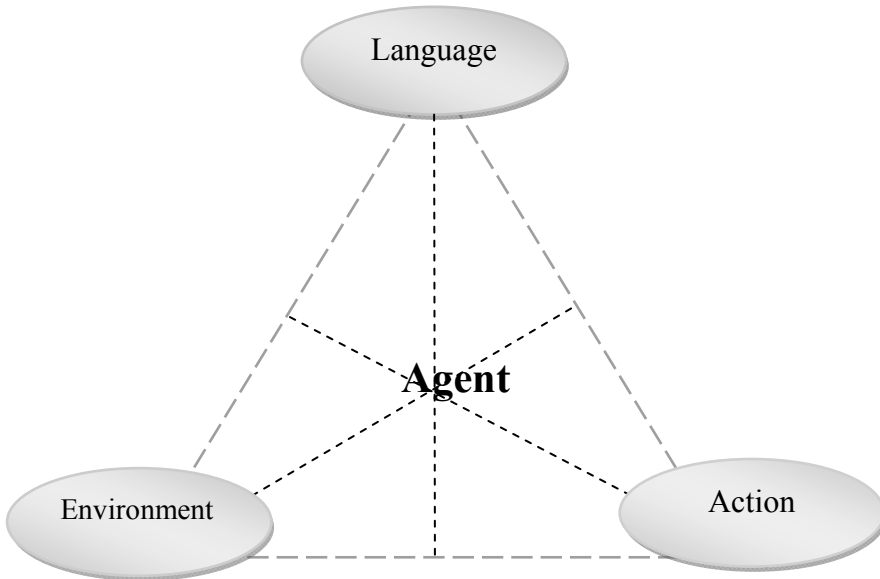
However, I think in this view we might find place for change and discoveries. Our actions are surely based on what we already know. But at the same time these actions change the world. So we cannot approach the same world with old concepts. We inevitably discover new things. Even when we are reluctant to notice something new, the world can be persevering enough to force us to build new things into our networks of action-related concepts.

8.3.6 The agent in cognition

One can ask, because of the very scheme of cognition presented in this research: but where in this description is the subject? There are only three parts of cognition here, environment, language and action, whose interrelations constitute cognition, and there seems to be no actor. Where is the core of any cognition – *I*, *Ego*, Descartes’ *cogito*? I think that the substantiation of *Ego* as some kind of stable unchangeable matter and source of beliefs and actions is superfluous for the description of cognition. We can use the concept of the

³³⁵ James, [1907] (1979), 115.

Cognitive system



subject in our everyday speech, but for the philosophical account of cognition we can do without. The Cartesian philosophers have already been criticized for the unjustified move from the statement of existence of thinking to the assertion of the existence of the thinker.³³⁶

I believe that the aims of this research do not demand us to investigate the substance of *Ego* at all. For the needs of this investigation it is enough to consider the actor as just a **center** of a given environment, language and action. The center means that the parts of the triangle of cognition are to be considered together, not apart. These are united in human being. Moreover, without human being the triangle of cognition could not exist. But we do not need to attribute any substance to *Ego* beyond environment, language and action. Maybe there is one, but the description of cognitive system does well without it. What we need for our account of cognition is this singular unity of three parts we observe. It is sufficient for a description of agency to stipulate the existence of this kind of unity, its fluidity and ability to move together with changes in a positional relationship of environment, language and action.

When we speak about agency, we have to take into account the constitutive role of environment for cognitive actions. As stated above, we act with and via the environment, which means that we use some parts of the environment as tools and other parts as targets or space for action. In this sense

³³⁶ This critique was initially presented by Pierre Gassendi. For the full review of the history of criticism against the presupposition of “I” in “cogito” see Williams, 1978.

the proposed model of a triangle of cognition satisfies the demands of embodied, embedded, extended, enacted approaches. It puts the agent in the context of the world, making it inseparable from the language he or she uses, as well as the body, instruments, social and cultural environments, etc.

This approach allows us to account for an agent's ability to comply with the constant flow of changes that he or she experiences. And these changes take place on all levels: starting from the changes in the body, like aging which renders a person hardly recognizable in comparison to early ages. Our language, environment, clothes and instruments, social roles and positions – all of these change constantly, but we still perceive ourselves as the same person. We could suppose that this stability of identity has to do with the mind and brain that it supervenes upon, but research shows that even mind and brain experience alterations. According to neurophysiology, there are constant changes taking place in our minds. Patricia Churchland puts it thus:

From one day to the next, the neurons that collectively make me what I am undergo many structural changes: new branches can sprout, existing branches can extend, and new receptor sites for neurochemical signals can come into being. On the other hand, pruning could decrease branches, and therewith decrease the number of synaptic connections between neurons. Or the synapses on remaining branches could be shut down altogether. Or the whole cell might die, taking with it all the synapses it formerly supported. Or, finally, in certain special regions, a whole new neuron might be born and begin to establish synaptic connections in its region. And that is not all. Repeated high rates of synaptic firing (spiking) will deplete the neurotransmitter vesicles available for release, thus constituting a kind of memory on the order of two to three seconds. The constituents of particular neurons, the number of vesicles released per spike, and the number of transmitter molecules contained in each vesicle, can change. And yet, somehow, my skills remain much the same, and my autobiographical memories remain intact, even though my brain is never exactly the same from day to day, or even from minute to minute.³³⁷

It is really difficult to find the identity between me one minute ago, one year ago and back to the moment of my conception. Everything in me has changed: my body, my mind, my social environment, my abilities and language. These changes take place on all the levels constituting my identity. Perhaps, only my DNA remains the same, but Descartes' *cogito* definitely cannot be equated with DNA. Additionally, the possibility to make a clone of me (which is illegal, but still feasible), which will have the same DNA but nevertheless will not be me, undermines the identification on the basis of DNA.

Thus, the constituting parts of a human being undergo constant changes and do not suit as the core of identity. But perhaps we can find some stability

³³⁷ Churchland, 2004, 46.

in the actions a person is taking? In fact we cannot. The actions change as well as the body does. The actions of a person as a child are not the same as actions of the same person as adult. Moreover, we sometimes can hardly recognize a person in different environments. A person can behave morally in one environment and immorally in a different one. So if everything changes, I propose not to substantiate *Ego*, presupposing the idea of a center of actions, environment and language. They all change, but still keep together in one human. I am not going to question the reasons of this attraction, as this problem demands another investigation. What is needed for my current investigation is to state this attraction of language, environment and action in humans as an observable fact. It is this attraction that plays the crucial role in cognition.

Every part of the cognitive system changes, but the unity of them remains the same, forcing the stabilization and balancing between the parts of the system, thus leading to coherent linguistic expressions integrated with actions and experience, which we can call knowledge. It is this attraction forming the unity of language, action and environment that could be used for the accounting of a cognizing agent.

A similar kind of approach to agency has been developed by Bruno Latour in Actor Network Theory (ANT). This theory was already briefly analyzed in the chapter dedicated to the objective. Bruno Latour proposes to consider not only human beings, but also material and cultural objects as actors, forming a whole functioning network. These actors, working together and corroborating each other, produce knowledge and truth. Thus Latour proposes an actor-network theory, where the social realm is constructed from all the kinds of things that interact in the building of a network.³³⁸ Thus the approach of Latour is close to the one I propose here in the combination of things that seemed to be incompatible.

But unlike Latour I consider cultural and material objects as parts of the environment where action takes place. Action permeates social, physical and other layers of the environment. In fact, Ward, stating the problematic situation of the modern epistemological paradigm, approves of this kind of combination, as it allows us to depart from the aforementioned modern epistemic paradigm with its strict division between natural and social and opens possibilities for a new epistemology, building on a balance between the parts of the cognitive system.³³⁹

We have to cope with a constant and asynchronous dynamic of our actions, language and the world, and the way it influences the relation between them. These dynamics are rather complicated. On the one hand, we have a tendency to stick to the things we have accepted once. This feature is part of

³³⁸ Latour, 1987.

³³⁹ Ward, 1996, 109–111.

“the economics of the mind”.³⁴⁰ On the other hand, if the environment has changed too drastically, the action-script will be unable to fit to it and yield actions without hindrances. For example, a religion once chosen may fail to answer the questions posed by changes in the environment. So the scheme can become useless and unable to provide meaning and truth. What formerly helped us act upon the environment ceases to do so anymore. Hence, we need to change and readjust the language and actions to remove hindrances of action.

8.4 Summary

In this chapter I have made an overview of the structure and main properties of the parts of the triangle between language, environment and action. I have attempted to reveal the properties of the concepts I propose in the light of empirical findings and make an application to the issues of religion. Thus, I have re-approached the same issues and facts that I have considered in parts I and II, now considered from a new perspective. The main points of this chapter are:

- We have to distinguish the person’s *Umwelt* with its egocentric perspective from all the possible environments present in the second order world. Intersubjectivity should take into account only people sharing a large part of the person’s environment. The difference of people’s *Umwelts* leads to controversy, as actions in different environments have different results.
- **Action** provides meaningfulness and realizes the intentionality of language. The possibility of such an action makes an instance of language meaningful. **Interaction** between humans realizes particular meaning.
- The meaning of an utterance depends upon the person's environment and the environment of the communication act. Very often we can grasp the meaning of an utterance but not act upon the utterance and therefore not hold it as true. If the environment does not allow me to perform some action directed at this environment, I consider the utterance wrong or meaningless.

³⁴⁰ Tversky, Kahneman, 1981, 453–458.

- Language is auxiliary to the actions taking place in the environment. Its main functions are: 1) focusing and directing the attention; 2) guiding mental and physical actions.

One of important ideas proposed in this chapter is the idea of **action-scripts**. This notion aims to show the non-arbitrariness of actions and their relation to language. Action schemes are based upon the actions, having words as their bearings. The words and sentences of our language are action-scripts that allow us to interact with the world. They draw our attention to different parts of the world and make us act in a pre-assigned way. This leads to our neglecting of some parts of reality. The action, governed by action-script, allows us to perceive a thing in a certain aspect and for a certain purpose. The whole range of possible action-scripts shows multiple possible ways to address the same thing in action.

I have also considered the issues of acting in various environments. It is our embodied actions and their perceived results that we can recall, combined with linguistic tools that together allow us to think and act mentally.

I also propose a picture of agency in the triangle of cognition. As I consider action as taking place in and via environment, the attempts to delimit or detach the agent from body, instruments or environment are in vain. Thus, I propose to consider agency as a feature, which involves various parts of environment for its realization: body, skills, identities, etc.³⁴¹ The environment, actions and language change and thus lead to changes of judgments and actions of human, yet agency persists. Hence, I come to a picture of the triangle of cognition, the parts of which are united in the agent and interrelated.

As we have made this observation of the main properties and functioning of the parts of the triangle of cognition, we will proceed in the next chapter to an overview of the particularities of the relations among the parts of the triangle. We will see how from this new perspective we can account for truth and diversity of religious truth claims.

³⁴¹ This idea is somewhat close to Latour's Actor-Network Theory, briefly investigated in the chapter dedicated to the objective. Latour proposes to consider the symbolic systems, material objects and beliefs as actors. But unlike Latour, I differentiate the action and the environment, thus constructing a threefold system. What Latour attributes to the particularity of an actor, I attribute to the environment.

9 Relations, limitations and truth in the triangle of cognition

As we now consider the cognitive situation consisting of three parts, we may address the way these parts relate to each other and what implications their relation has for the issue of truth and the problems of truth in religion. But now the situation is more complex, in comparison with the subjective-objective picture, as we have to track the three-part relations. Consequently we suggest that the relations are more complicated and that the classical theories of truth, focused on a relation between two parts, should be reconsidered for application to a three-part relation.

Moreover, as we have now revealed the structural properties of the parts of the triangle of language, environment and action, we can ask how these structural properties affect the interrelations among the parts. Having distinguished language, action and environment, we may compare the way these issues could be related to each other. We can also reveal the properties of the relations that appear among them and how they affect cognition and truth issues.

In *Tractatus* Wittgenstein proposes an isomorphism of facts and their pictures in language³⁴², which allows him to identify the limits of world and the limits of language. He claims that “limits of my language mean the limit of my world” and that “the limits of the world are also [the limits of logic]”³⁴³. But as I propose a tripartite model, I need to reveal how action, language and environment are affected in their interrelations and whether their limits are the same. As their structures are not similar, we may guess, for example, that their interaction is complicated and might result in expansion of the internal limits of the parts of the triangle of cognition. Hence by analysis of structural differences of parts of the triangle of cognition, and the ways of relations among them, it is possible to reveal possibilities of expansion and structural gaps, which these relations may hide.

So in this chapter I will consider the relations among the parts of the triangle of cognition, the way these relations result in cognition and truth, and the possible gaps resulting from the differences of the parts. Finally, I will turn to the application of my findings to the final destination of my investi-

³⁴² Wittgenstein, *Philosophical Investigations*, §2.15.

³⁴³ Wittgenstein, *Tractatus Logico-Philosophicus*, §5.6.

gation: the problem of truth in religion. I will consider how we can apply the triangular model to theories of truth and especially to the problem of truth in religion.

9.1.1 Action in a conceptualized environment

I have stipulated that an action needs an environment to take place. Here I wish to show that environment and action are tightly bound, although they are not the same.

We can see that numerous varieties of changes take place in the parts of the environment we consider physical. Apples fall to the ground, we breathe, the Earth moves. In fact, I consider the dynamics of the environment as a common way of things to exist. But language-driven action can break into the natural way of things and, for example, intentionally stop the breathing for a couple of seconds. Without language we cannot form an intention to stop breathing (only the changes of environment, such as falling into the water, can force us to hold our breath), or to formulate an utterance such as “if only the Earth could stop moving”. Language can drive actions that are intervening (or directed at intervening) in the natural way of things.

Our environment is not purely physical or social. It is better to say that the environment we live in is conceptualized by language. We are born into the second order world already present for us. Humans have already constructed and conceptualized reality in accord with the actions to be performed. On the one hand, the environment dictates the actions to be done upon it. For example, adults have scenarios of behavior in various spaces of environment, such as theater, lunch room, street, bathroom, etc. These parts of environment are structured and worded in a way that ascribes particular actions to be done while inside of them. The environment demands certain actions from us and leaves not much possibility of acting in a different way. We cannot, for example, find a space for plowing in the environment of a ballroom.

On the other hand, our actions build our environment in a somewhat similar way to how the habitualization of frequent actions builds social reality.³⁴⁴ But I do not make a sharp distinction between social and natural. One of the most important features of the conceptualization of the environment I propose is the absence of impenetrable borders in it. I argue that *our actions pierce the environment as a whole, affecting various layers in it.*

Thus, every part of the environment should be considered not in isolation, but built into the other systems of the environment and made ready for our coping with them. We have to be aware that various parts of the environment are affected by any given action. Hence, social, physical, neuronal – everything is bound together in the domain of the environment. The actions taken involve multiple layers and systems in the environment. This is how I ac-

³⁴⁴ Berger, Luckmann, 1966, 59–61.

count for the embodied, embedded and extended approaches to cognition. If all these structures – body, instruments, situation, social and physical environments – are to be taken into account for the description of how we cognize, we may summarize these domains in one description. Environment embraces various layers of reality. Hence, action permeates social, individual, physical, neuronal and other levels. We do not just take actions upon the environment, but we act **with and via** the environment.

So I can conclude that as action permeates various layers and domains of the environment, every action inevitably involves more layers and affects a bigger scope of the environment than its description contains. A singular human, acting in his or her *Umwelt*, for example a householder switching a light on, affects by his or her actions parts of the environment not present in her *Umwelt*. For example the action may alert a burglar the householder did not know of. As the environment is continuous, with the layers and things interwoven in one another, the isolated action (such as “taking an apple”), to which the language direct us, always supposes various parts of environment to be present. This means that the description of an action in language does not reveal the complexity of the action taken.

Action is more complicated and compound than its linguistic description may indicate. But it is the environment that provides all the necessary resources for fulfillment of an action. In this sense the way we “unpack” the utterance into actions³⁴⁵ depends on the environment and the amount and scope of actions taken are not equal to those explicitly present in the utterance. As the environment is present for us already structured by other humans, and we have learned in the process of socialization how to act upon it, the environment we are born into is ready for our language-driven actions. The environment allows us to “unpack” an action from an utterance. Once we have learned an action, we do not need a verbose description. The action becomes “inbuilt” in our environment. So we can evoke it in one simple linguistic reference.

Thus, it is our embodied action that provides the conceptualized environment with all its particularities in order to “unpack” an utterance in action. The action “taking an apple” includes various layers of environment: from neuronal firing to muscular contractions, changing the positions of the bodily parts and the things in space, lots of incidental actions, etc. All of these are constitutional of the “unpacking” of a given utterance in action.

Experiments by cognitive psychologists have revealed the empirical link between action and language in cognitive tasks.³⁴⁶ Words have the ability to affect our actions, which means that language brings with it not only the way

³⁴⁵ Dipper, Black and Bryan described the processes of “packaging” and “unpacking” of meaning into and from utterances. (Dipper, Black and Bryan, 2005, 420).

³⁴⁶ McGurk and MacDonald, 1976; Glenberg, Havas, Becker, and Rinck, 2005; Glover, Rosenbaum, Graham, and Dixon, 2004, 103.

of cutting the world into pieces, but also the actions to be taken upon them. Language is an interface between humans and the environment. The words and sentences of language are action-scripts that allow humans to intervene in the environment, mapped by other humans in accord with language and suitable for actions. The utterances draw our attention to different parts of the world and make us act in a pre-assigned way.

Thus, in speaking about action upon some utterance, we must keep in mind that the environment of a person is already structured by other human beings and mapped in accord with language. A given person's process of cognition and coping with the environment can be described this way: **language => action => object**. However, any part of this scheme can function as the initial point of cognition. It can start with the action, leading us to encounter something unpredicted. Here language in a broad sense specifies action, and action subsequently specifies objects. So cognition is at the same time environment-building. Language-driven action tends to find its object in the world, just as hunger makes us find something to eat. In a given situation we do not perceive all the namable objects. We discriminate only those relevant for our current action-script and perceive the rest as a background.

We do not discriminate objects "as such"; they are always discriminated in accordance with some action-script. For example, we can render one and the same book as an equivalent of €20, or a source of wisdom, or a weapon, or combustible stuff. The identity of an object depends on the action we are currently taking. Normally a book is taken as a part of an action-script "to read". But if we are looking for something to kill an insect, a book can be recognized as a weapon. Action-scripts define which objects will be involved in acting and how they will be involved. Action-scripts actualize available parts of environments. This means that they can be enacted in various conditions simply by attributing necessary object properties to certain parts of environment. That is why a book can be a weapon: its identity depends on what we do right now.

I must also respond to the possible objection that language is not only a cognitive tool as I represent it in relation to the environment.³⁴⁷ Language is a whole system with its own rules of syntax, objects and possible action. Thus, one might object that language is an environment of a certain kind. I agree with this critique. Indeed, language as a system within which we are capable of acting can be considered as a particular environment with a certain scope, objects and rules of action. A linguistic environment is all the concepts that we know about, but it includes also those that are not present in our acting upon our *Umwelt*. In this sense we have to divide the actions taken purely *within* the domain and environment of language, and the actions taken *with*

³⁴⁷ Additionally, language has numerous usages other than cognition. But as my focus here is on cognition, consideration of these issues would lead the investigation astray.

the help of language. The whole array of words we never use, other people's beliefs we do not share, and the concepts we reject, are available for us within the domain of language. We can have interactions with other people on these wordings, but for us they are merely wordings. For example, the word "God" is a mere word for an atheist. An atheist knows how to act upon this word in the domain of language, knows certain action-schemes, related to word "God", but the attempt to act upon them in the domain of his *Umwelt* fails. Thus, some utterances are meaningful only in language as the environment.

9.1.2 Objects in the enacted environment

The next important argument is that the objects in our environment are discriminated not in a "natural way", but in the way *determined by our language and actions*. The borders between the things we draw and the properties we distinguish are related to the actions we take. We discriminate properties, objects and parts relevant for our actions and revealed in such actions. Our descriptions of the "objects" of our environment can be explained in terms of possible actions to be taken upon the parts of environment connected to the words. What we call the properties of objects are in fact the properties related to our actions upon these parts of reality. We are prone to look for the characteristics of things. *But we can figure these out only by acting upon the things*. Thus, I propose the tight binding between our action and perception in the vein of Alva Noë's account.³⁴⁸ But I proceed further and claim that our linguistic division of the world into parts is also based upon our actions.

Why do I speak of the environment using the term "parts of reality"? As Nozick points out, the world can be divided up by language into parts in numerous ways.³⁴⁹ And as we can see from our investigation in chapter 8, our action, environment and language working together shape and direct our cognition, shifting the attention to various objects, and revealing these or those properties of things. Thus, I claim that the objects we relate to in our language and action are not some "natural objects", with natural borders, but the parts of reality carved up by human language and action. I suggest that the ways of dividing the world are first of all grounded by the actions we take upon the world. Lakoff and Johnson's investigations of language structure point in the same direction: linguistic structures are primarily based on our basic embodied experiences and actions upon the world.³⁵⁰

Thus, I suggest that what our world consists of is first of all based on natural abilities of the human body and the common way it acts upon environ-

³⁴⁸ Noë, 2004, 132.

³⁴⁹ Nozick, 2001, 48.

³⁵⁰ Lakoff, 1987; Johnson, 1987.

ments. First of all our actions are directed towards things in space we are capable of being aware of. Our actions are directed at the things we see, feel, smell and are aware of by extensions of these feelings by imagination. We touch certain points because our fingers allow us to touch them.

Despite the fact that there are some common human possibilities of action, grounding any ontology, there are still many possible ways of cutting reality into objects. As humans live in different environments (different in geographical, social, cultural and other senses), their actions are shaped by the particularities of the environment. In the vein of social constructionism I suggest that these ways are related to particularities of action taken by humans or social groups.³⁵¹ But from my point of view, the actions taken by humans not only construct, but also disclose for us some properties of reality. We construct actions to address reality not the reality itself. The environment reveals various aspects depending on the particularities of our actions, as was observed in chapter 2. The differences of action humans take upon reality and what they perceive as a result of these actions also affect the way humans speak of their lives. Thus the particularities of ontology are expressed in language, which in turn directs our attention and actions. So various groups and humans give rise to various ways of dividing the world into parts, reflecting their actions and shaping their environments.

This discrimination is reciprocal. First our way of action, combined with linguistic tools, distinguishes some things in our environment. Then our attention and actions are drawn to these points in a manner of our action. As a result, these points and actions directed to them form a stable relation, which in turn is put into the linguistic form of an utterance or a word.

Hence what we consider inherent in things is in fact inherent in our way of acting upon these things. If we cannot perform any action – mentally or physically – for example to look at something or to smell, etc., this will not be a part of our description of the part of reality. If I cannot smell a strawberry, strawberries have no scent in my *Umwelt*. If I do not contemplate a sunrise, there is no beauty of sunrise in my environment. If I do not pray or otherwise direct my attention to God, there is no God in my environment. However, I can use the word “God” in my conversation with others, as I can understand the way they use it.

But as any human is acting in an egocentric³⁵² space or *Umwelt*, limited by cognitive capabilities, only some part of the world is available for his or her action. Of course, the intersubjective issues are also present for us – our environment is partly structured by other humans, our communication with others affects our actions, etc. But in order to direct our actions to things, we need them to be present in our environment, not in someone else’s. Thus, an

³⁵¹ Berger, Luckmann 59–61.

³⁵² Here the term “egocentric” is used in the same technical way that it is used by Evans. It emphasizes that our relation with the world is body-centered.

atheist cannot direct a prayer to God, despite the fact that God is present in a believer's environment. In the same manner, the actions of social groups are also centered upon some limited part of reality, providing the basis for a limited view upon the world and what it consists of. Thus, as humans and groups of humans relate in action only to some part of the world, their ontology does not grasp the world in its totality (despite the common attempts to expand the ontology to the whole world and embrace the totality of the environment with the concepts used).

But reality and the history of human investigation of the world show us that the world is not limited to what can be perceived and acted upon by one person during a lifetime. There are lots of things that a given human does not address in action, therefore, they are not present in his or her *Umwelt*, but present in the *Umwelt* of another person. A given person may never speak of God, humility or space ships, and never act upon them, despite the fact that these things or properties are present in *Umwelts* of the other people. Moreover, there could be things and properties no human addresses in action yet. As the invention of new tools (microscopes, telescopes, etc.) leads to the expansion of possible actions, we encounter new things and new properties of common things.

Therefore, we can extrapolate this tendency thus: there is still a lot of reality to be discovered through new actions upon the environment and through the particular usage of language, leading to changes of action. Through changes in action we can perceive reality in a new way and discover new properties of old things. We can encounter new objects and properties of them. The invention and development of new languages (such as, for instance, the language of mathematics, logics, etc.) provides possibilities of new actions and the expansion of the environment.

9.1.3 Perception and the gaps in it

As I have made a claim that there are a lot of things we do not perceive as we never act upon them, I want to linger more on this claim, as it is important for the issues of diversity and truth. Here is the problem: despite our limited environment and limited scope of actions, we perceive the world as whole and known to a sufficient extent. We do not feel a blatant deficiency of our knowledge of the world. But, as was revealed in chapter 5, there are lots of things left beyond our grasp because of the limitations of our cognitive capacities and limitation of human life span.

As the investigations by cognitive scientists of human perception have shown, there are always enough things in the world to perceive and to fill the perceptual field. We have considered these investigations in chapter 5: there is much more to see, hear, feel, etc., than we actually do see, hear, feel, etc. But our cognitive mechanisms cut off a lot of things, which in principal are available for perception. In fact, the same can be said about our actions. We

perform a limited range of action in our everyday life: usually these are routines and some common action-scripts.

Within the action-script our actions may never encounter unexpected hindrances or new things. Indeed, it is hard to encounter something new while cooking dinner, or performing other routines. We perceive the things relevant for our current action, feel no unusual obstacles, and do fine. As a result, the world around us *seems known and grasped as a whole*, no matter how many things we overlook. I do not perceive neutrinos, but I am doing fine without them, never noticing their absence in my *Umwelt*.

In fact, this wholeness of perceived world covers and hides not only the limited scope of everyday actions, but also the deficiency of some important abilities, such as sight. The world is perceived as a whole and known both by a blind person and a person with good sight. This is how Alva Noë puts it:

For those who see, it is difficult to resist the idea that being blind is like being in the dark. When we think of blindness this way, we imagine it as a state of blackness, absence and deprivation. We suppose that there is a gigantic hole in the consciousness of a blind person, a permanent feeling of incompleteness. Where there could be light, there is no light.

This is a false picture of the nature of blindness. The longterm blind do not experience blindness as a disruption or an absence. This is not because, as legend has it, smell, touch and hearing get stronger to compensate for the failure to see ... It's because there is a way in which the blind do not experience their blindness at all. Consider, you are unable visually to discern what takes place in the room next door, but you do not experience this inability as a gaping hole in your visual awareness. Likewise, you don't encounter the absence of the sort of olfactory information that would be present to a bloodhound as something missing in your sense of smell. Nor do you notice the absence of information about the part of the visual field that falls on the "blind spot" of your retina. In this same way the blind do not encounter their blindness as an absence.³⁵³

But there is also a way out of this identity of perception. Our actions can eventually lead us to an encounter with something new, something resisting our common actions. The circumstances of our perceptual act may change, forcing us to perceive something new and unexpected. But this is a rather rare case, which we may exemplify with religious revelation. Scientific findings are often a result of unexpected results of action, when results of experiments bring forth something new. Thus actions can reveal some things (that will be conceptualized as new particles, substances and forces) that demand new actions and wordings to be dealt with. In some environments language allows doing quite the same. As our language has its own rules of

³⁵³ Noë, 2004, 3–4. Of course, the blind person is aware of his or her blindness due to social interactions. In this sense we can learn of our limitations from others. But learning of limitations does not help us to transcend them. Even if we know that others know something we do not, this does not grant us access to the way they perceive their environment.

functioning, it can also bring us to the verge of something yet unperceived. Language allows us to extend our scope, directing attention beyond our current environment. When we use language in a specific environment, like math, it can lead us to the conceptualization of new things. For example, in this manner people stipulated various sorts of numbers, sets, infinity, etc. It was the language-driven action upon the specific environment of math that has lead to such a conclusion. I will consider this function of language in section 9.2.

So by the means of changes of action and language we manage to reconfigure and reconceptualize our environment, sometimes filling in the gaps in the process of cognition. We constantly add new parts to the world we held as sufficiently whole and having no gaps, undermining our current picture of the world. Quite often these new parts are added not to the places we deemed as having gaps. For example, in pre-Einstein physics it was held that there were certain gaps to be filled in: e.g. explanations of black-body radiation and the photoelectric effect. But Einstein's theory and quantum mechanics have filled in quite different gaps, showing new things and layers in the world. The lack of these things was not perceived at all.

We can suppose that religious revelations and conversions are possible because our seemingly sufficient and whole knowledge of the world is a result of particular actions, revealing only some objects, perspectives and properties. When we suddenly encounter new things, or old things from another perspective, it turns out that there are plenty of new aspects that we now can approach in action. A big part of the world that was not perceived before suddenly comes into sight and requires new actions and changes of the whole picture of the world and scheme of actions. Thus, I suggest that the perceived sufficiency of our knowledge of the world in fact eludes us. There are gaps in our perception, and the things and properties we are not aware of, as we do not act upon them. These gaps and various possibilities of filling them in give rise to co-existence of diverse beliefs and truth claims, which nevertheless yield successful actions in certain environments.

9.2 The language-action relation

9.2.1 Acting under description

I want to begin an investigation of the relation between action and language by recalling Anscombe's idea of action under description, and the development of this idea by Ian Hacking. Anscombe proposes to consider intentional action as an action under description.³⁵⁴ This means that intentional human

³⁵⁴ Anscombe, 1959.

action requires some linguistic expression to be performed and accounted for correctly. Hacking applies this consideration to the cases of memories and changes of description of human behavior in a society. He writes that descriptions of cases change as the understandings of particular actions change. New description opens possibilities for new actions. This, in turn, raises a question about the intentions to perform certain action and the results of the action. This is how Hacking puts his explication of Anscombe's account:

The thesis that action is action under a description has logical consequences for the future and for the past. When I decide to do something, and do it, I am acting intentionally. There may be many kinds of actions with which I am unacquainted, and of which I have no description. It seems to follow from the thesis that I cannot intend to perform those actions. I cannot choose to do those things. I could of course choose to do something A, to which a subsequently constructed new description B applies; then by choosing to do A, and doing it, I did indeed do B, but I did not intend to do B. The limitation is not a physical constraint or a moral prohibition. It is a trivial, logical fact that I cannot form those intentions. This fact cannot make me feel confined, or make me regret my lack of power. I cannot feel limited by lacking a description, for if I did, in a self-aware way, feel limited, then I would have at least a glimmering of the description of the action and so could think of choosing it.

Anscombe's theses about action seem to have an unexpected corollary. When new descriptions become available, when they come into circulation, or even when they become the sorts of things that it is all right to say, to think, then there are new things to choose to do. When new intentions become open to me, because new descriptions, new concepts, become available to me, I live in a new world of opportunities.³⁵⁵

I can add that in terms of the triangle of cognition "the new world of opportunities" is in fact the re-conceptualized environment a person lives in. The environment is conceptualized in accordance with the new possibilities of action. The description in fact establishes the environment where action is taking place. It presents a linguistic conceptualization of action in the environment. But the applicability of the description depends on the given human's ability to take actions in such an environment. Thus when we are capable of changes of description of action we in fact are capable of changing the scope and character of action, as Hacking writes.

The result of any given action depends on the environment where the actions are taken as well as the way this environment is conceptualized by action-script. We can direct the action to new objects or build it into new relations between people. In this sense the language (terms of description) is crucial for taking actions. The choice of terms of description affects the action we are taking. Consequently, what we perceive as a result of acting also depends upon the wordings chosen. This is especially important when we speak of religious actions.

³⁵⁵ Hacking, 235–236.

Let us take a look, for example, at two descriptions applied to the same action: a description of a ritual made by an anthropologist and a description of the same ritual made by a believer taking part in the ritual. The anthropologist observing the Voodoo ritual writes that the ritual is aimed at reaching a possession trance, “comparable to cases of hysteria or other forms of neurosis”. In the ritual “trance states are induced not by hallucinogenic drugs but by rhythmic drumming and dancing”.³⁵⁶ In contrast, people performing the ritual describe it this way: lwa spirits are “danced” or being “beaten” by drumming onto the head of devotee.³⁵⁷ We can suggest the same action to be performed by atheists following anthropological descriptions: to drum and dance, having a clear goal of reaching a trance state close to hysteria or neurosis. Will it still be the same action, leading to the same feeling of “lwa possessing a devotee”?

We can also consider a closer example of an experiment which any believer can perform. Let us try to substitute the words that we use to direct our prayers to God with those used by cognitive scientists to describing our action. For example, Pascal Boyer considers God a minimally counterintuitive entity (subject without body), and claims that minimal counterintuitiveness is a core property of religious objects.³⁵⁸ But I cannot pray to a “minimally counterintuitive entity”. Less could I praise God’s counterintuitiveness as I praise God’s wisdom and love. My action here fails, because when I focus my attention on “minimally counterintuitive concept”, the result of such focusing is not the same as focusing on “God”. I clearly understand what “minimal counterintuitiveness” means, but for me this is definitely not the same as “God”. “Concept” is a part of a different action-script and cannot substitute “God”. We cannot perform religious action, using scientific descriptions of this action.

Moreover, I claim that a scientist herself could not reach the feeling of unity with God that a believer obtains in prayer if she followed her own recipe of maintaining “minimally counterintuitive concept”. I also strongly doubt that an anthropologist can reach a possession of lwa by repeating Voodoo ritual in a laboratory, drumming to reach a neurosis-like trance state. In fact, these are totally different actions performed in different environments. The explanatory “mapping” of religious actions in the scientist’s account is not relevant for the believers. They do not accept it and do not try to optimize their actions to reach the “real” goals of religious actions that scientists suppose. Neither do they use cognitive scientists’ ideas to improve understanding of the nature of God. The problem with acceptance of such explanations is that they pose a different linguistic expression of their actions that will not lead to the results desired by believers. What we do and what we reach in

³⁵⁶ Morris, 2006, 201.

³⁵⁷ Morris, 2006, 201.

³⁵⁸ Boyer, 2001, 65.

action depends on the action-script and could not be reached using other action-scripts. Thus, religious actions have their unique results that are not reachable by means of a scientific description of the ritual.

9.2.2 The religious language in our actions

As the process of upbringing a child includes a lot of teaching of actions, everyone has already lots of learned actions ready at hand. These actions are embodied and attached both to objects in our external environment on the one hand, and to signs and words on the other hand. So possible actions, packed into the words, are in a sense built into our bodies and hence we do not need a whole detailed description for any action to be taken. We need only to perceive some kind of cues (to hear an utterance, for example) to actualize these actions. To take an apple from the table we need to discriminate in the environment things to which the actions, surrounding “table” and “apple”, could be applied. And then we have everything necessary for action, as the environment is ready to be acted upon. But the intricate actions, such as solving mathematical equations or reading of *belles-lettres* require a lot of actions and relevant wordings to be learned. We have to create a new environment where these actions are to be taken.

In chapter 8 I considered as the main functions of language attracting and focusing of attention and guiding our actions. I want to emphasize that these functions are especially important in religious language.

In religion language helps to attract people’s attention to things not present in everyday actions, such as taking a shower or cooking. Religious language allows making God always present in the environment: if we pray to God, we can keep our focus upon Him or Her. But as religion describes a world in a way that is quite distant from our everyday activities and objects we encounter in them, religious language goes to great lengths to create and conceptualize an environment for acting and attracting attention. With the help of stories and myths it creates a space and teaches humans to orientate in it, to distinguish these or those objects and forces, to perceive these or those feelings previously indistinguishable. But as the environment, including humans, changes in time, religious language is also changing. If no one can focus her attention to the thing called “soma”, for example, it becomes impossible for human beings to act upon this word. This means that this concept has been cut off from the network of actions and things. The only way to revive this thing is to attach its meaning to something present, making it a synonym to another word in use, or to reinvent something.

9.2.3 White spaces

Building the world out of atomic propositions leaves no spaces. If the limits of the world are the same as the limits of language,³⁵⁹ there is nothing outside of language. But if we build the world of actions that are directed by utterances towards reality, then we will easily see that there are lots of spaces to be filled in, lots of things to be discovered, lots of possible actions to take. Thus, in this chapter I am going to show that the triangle model of cognition allows us to approach the things we omit in our common usage of language.

Does the way our language directs action cover all possible things and their combinations? We can check this out by comparing the words and the things they relate our actions to. This task may seem tautological, as here language is a tool we use to check the language: if we can name or point at something, then language is capable of doing this. How can we say with language things this language is unable to grasp? But here the key instrument is not the language, but our body and the actions we can perform upon the things language points at.

Here I start with the observation that there is a considerable structural difference between language and the environment as it opens for us in actions. The words and utterances are distinctly detached from each other, having clear beginning and end. But the things and space around us are not that distinct and do not have strict and insuperable borders and boundaries. This is why it is questionable whether we “cut nature at its joints”.³⁶⁰ We can change an apple by making an apple pie, change the borders of an apple by squeezing it. But the word “apple” does not allow changes, remaining the same. We have to use different words to describe the changes taking place with the apple. In the environment the space and things in it are perceived as a whole continuum with no unchangeable borders or boundaries inside. The things may consist of multiple parts, like sand, have fuzzy borders, like water, and a complicated structure, and experience changes in time.

I am going to develop this observation by citing Michal Lynch’s example revealing the role of ontology in our relation to the world.

Imagine that I ask a friend how many objects are in my study. After counting the books, computer, desk, chair, and whatnot, she announces that there are exactly one hundred objects in the room. One sort of philosopher might claim that even though my friend’s answer is acceptable loosely speaking, strictly speaking she is incorrect because she has forgotten to count the molecules and atoms in the room. Or consider the mereologist, who believes that every part of an object is itself an object, and that for every pair of objects, there is an object that has each member of that pair as parts. He will insist that we also count the “mereological sums” of the various macro and micro objects in the room, such as the object made up of the sum of the tip of my nose and my

³⁵⁹ Wittgenstein, *Tractatus Logico-Philosophicus*, §5.6.

³⁶⁰ Plato, *Phaedrus* 265E.

keyboard. If either of these philosophers is right, it would seem that the number of objects in the room is much larger than what my friend believes.³⁶¹

We can see from this example that there are multiple ways to cut the environment into objects using language. But there is one more important thing, perhaps not that evident from this example: the way we cut the environment into objects has consequences for our actions upon the environment.

I will show this with another example. Let us look around and count everything we see, as was proposed by Michael Lynch in the experiment described above. Our language and the conceptualizations hidden in it are convenient for our actions in a certain environment. Thus, in the working room we inevitably will see everything we use. But if we try to undertake an unprejudiced exploration of the space, we will soon see the lack of words to describe the environment. Let us, for example, take a look at an apple on a desk. We have the words for the skin, seeds, pulp and stem of an apple. But we do not have any special words for all the visible parts of an apple, for the places of connection of apple skin to pulp, for various combinations of parts of the apple, like the seed plus 1 cm of pulp around it, etc. All of these parts are covered by the same collocation “piece of apple” and the properties and actions connected to this collocation are distributed to all of them.

Of course we can create some structures to point at these real existing entities, in the same manner as I have done now. But the lack of wordings for these parts shows us that we do not in fact directly act upon them. We do not distinguish these parts and do not manipulate them as with standalone objects. They are involved in our acting upon objects we distinguish in our language, so our interaction with them is only collateral and indirect. We bite a piece of apple thereby cutting the place of connection of skin and pulp; we throw away a core of an apple including a seed and 1 cm of pulp around it. But we do not interact directly with these objects and combinations of them; we do not make observations of them. Moreover, as we do not direct our actions and attention towards these things, we also do not pay attention to the response of these parts to our actions. Thus, we can hardly register their role in our action. This example reveals not only the issues of mereology, but also the issues of perception and action driven by language and thus constituting our environment.

If we try to attach a word to each cell of the apple, we see that lots of cells remain merely “cells”, having no other identity. There are “cells of the left side” and “cells of the right side”. This kind of discrimination supposes that all the cells under the same category should be treated in the same way, as they are indistinguishable in our categorization. Indeed, they *can* be addressed this way, if we are going to perform an everyday action such as eating or grasping an apple. For these actions the exact identity of the cells of

³⁶¹ Lynch, 1998, 17–18.

an apple is not important. In this sense, the way apples are identified by language fits our everyday needs. But it might be unacceptable for other kinds of action, for example, for a biologist distinguishing the cells infected by a virus.

But is it really important which parts of an apple are present in our language? I believe it is, as the wordings direct our actions. When we have words to point at molecules and cells in an apple they become a part of scientific investigation. When we are able to distinguish a virus in an apple, we can start research on apple viruses. And vice versa, the actions we take upon the world eventually lead to encountering new things and properties, which we conceptualize in new words, such as the words “cell” and “virus” for example. Both molecules and viruses were present in apples for thousands of years, but we could not name them and could not directly act upon them. They were transparent for the actions humans took upon apples. And for now, lots of people eat apples as if there were no cells or viruses in apples. Apple viruses and cells are not a part of these people’s environment. The same is applicable to anything in the world: if we do not act upon something, it is not conceptualized and not present in our environment. The way in which world is cut into joints determines the actions to be taken upon this world. And the possibility to cut the world in lots of different ways, getting different environments and scripts of action, as we can see in different cultures, suggests that there are lots of spaces for possible actions opening the world in numerous new ways. Otherwise these ways of directing various actions, which the conceptualizations of different religions and cultures suggest, would not be possible.

I propose to call these things that are unaccounted by language and not addressed in direct action **white spaces**. The points in our environment, to which our language directs our action, have a profile of all possible actions upon them and their constellations. Our language drives our actions, which are directed at some aspect of this whole profile and result in perceptual opening of things in a certain way. The rest of possible ways of opening of things by actions, remaining uncovered through language-directed action, I will call white spaces. Our language both directs and focuses our actions, thus not driving our actions towards unnamed objects. We cannot act upon a thing that is outside our scope, that we cannot focus upon.

So I claim that language-driven action leaves lots of things and properties uncovered in white spaces. I can show this lack of attention to lots of things, their combinations and corresponding conceptualizations, in quite a simple way. We could ask: can we, by moving our attention, close-ups and combinations of visual patterns (as in the picture “Three worlds” by Escher) see new things, previously unnoticed? Yes, we can. Can we do just the same with the other senses? Can we move our attention from its focus upon the overall sensation of the presence and the weight of an apple in hand to the feeling of the particularities of the apple’s skin, its roughness or smoothness?

Yes, we can. We can also move our fingers to feel the areas of the apple's skin that we have not touched yet. Therefore our own experience hints at a lot of things we leave unnoticed in our common actions, a lot of properties we could encounter if we change the character of action.

Thus our language leaves a lot of things unnoticed and absent in our actions. If we now recall the important idea considered in chapters 2 and 4 that our actions determine what we perceive – we can conclude that our environment is a result of particular actions upon certain conceptualizations, opening some aspects of the profiles of the world. It is one of many possible environments, and if we change actions (at the same time changing conceptualization), we will come to a different environment where different actions are possible. In fact, such changes can take place on the social level – and here we can compare the differences between the actions and conceptualizations of the Middle Ages to those of our time. The changes can also take place on an individual level – and here we can compare how we perceive the world and act in it before and after religious conversion.

In our speaking and everyday acting we usually do not perceive that there are gaps in our knowledge and white spaces in our environment. There are no gaps in language, as language contains nothing more than itself. We do not feel gaps and white spaces in action, as our action-scripts keep our focus upon things relevant for the scripts. But we can see these white spaces when we direct our action upon reality in a spontaneous way and not in ways our language suggests. We can also compare how differently humans and cultures conceptualize the environment, and act in it, to see the possible profiles of the things.

The concept of white spaces leads us to a conclusion that there are infinite possible ways of opening the world in actions following our schemes expressed in language. We can always address the same things in new action and discover something new, thus extending, enriching, and changing our environment.

9.2.4 Language extending environment

If we compare the scope of language and the scope of actions upon the environment available to us, we can see that they do not match. One kind of mismatch was shown in above in the example of actions upon the apple. There I aimed to show how language directs, focuses, and even limits our actions. Here I am going to consider the other way language influences our actions, which is the **extension of our possibilities**. Language allows not only grasping of things and events, embracing a lot of experienced properties, parts and objects in one word or utterance.³⁶² But, more importantly, language allows us to transcend the limits of the experienced. It allows us to

³⁶² Dipper, Black and Bryan, 2005, 420.

direct our attention and actions to the things we do not perceive here and now. Let us consider such words as “all”, “always”, or “never” in comparison to the actions they are relating to. If we do not apply special limiting expressions to these words, such as “all of my experience”, “never in my life up until this moment”, these words embrace the whole space of objects and time.

Nevertheless, such words do not allow us to reveal what is uncovered in white spaces. Their functioning is different, as they are used to extend the scheme of actions we live in. This manner of usage is similar to drawing lines and finding the points of their intersection on a graphic scheme we have painted, extending the lines of the scheme. Thus, the identity and position of a point we consider as a point on the line so drawn depends on the scheme. For example, where the “God” is in our environment depends on our current scheme of actions. What we should do in relation to God – where to look for God, how to imagine God – relates to our action schemes.

Roughly speaking, if we extend a primitive scheme of action, God will be imagined as super-powerful, demanding sacrifices. Here the actions related to “power” and “feeding” or “tribute”, common in a primitive society, are extended. This picture of God is incompatible with the one we got extending a refined philosophical scheme of modern Christianity, with the notions of “Grace”, “Trinity”, “eternity” for example. Thus, “all”, “never”, “always”, “God”, “sin” might not overlap depending on the action scheme they are used in and the environment where these are applied.

So our language allows extending the schemes of action. But from the perspective of the actions and their extensions, our “all”, “always”, “God”, and other points beyond our current experience should be considered in relation to the given action schemes to avoid misunderstanding. What I consider “God” may be totally different to what an Amazonian considers so.

There are more problems arising from this transcending function of language. For example, we cannot relate in action to the whole amount of the objects. If I justify the usage of such words by the scope of my possible actions, I conclude that I can use these words only to embrace the scope of *my* actions in *my Umwelt*. I can use the word “all” to denote the array of the objects I have encountered. But I cannot use this word to denote the things I have never encountered and the space not available for my action. From the perspective of actions it is illegitimate to extend these words to the domains they are quite often used in, as “all, including all people ever lived”, “always since the beginning until the end of time”, etc.

Nevertheless, such words allow us to complete an environment with some properties. Our usage of them allows us to do well without knowing lots of things, as I described in 9.1.3. Speaking of “all” we have a feeling of a complete grasping. But in terms of action this kind of speech is not correct, as we just distribute some experienced properties to the other possible objects of

experience and parts of environment. This directs our actions to these objects and parts and to eventually not yet experienced parts.

Hence, the language *reaches out* influencing our actions upon things (in a very broad sense of the word).³⁶³ It *pre-structures our actions* in addition to immediate perception and interaction with the environment. It gives us freedom, as it allows us to be driven by something we do not experience here and now. It shapes our action and attention. Additionally, language gives us an *impression of a total grasp* of the environment. Thus, language allows us to transcend the limits such as time and space, providing tools to deal with the environment in new ways: to plan the future or to speak of the things not present here and now. We can attract our attention in new ways and form new actions with the help of language. In this sense the transcending power of language is legitimate and good for the expansion of our knowledge.

But at the same time language not only transcends, but also *transgresses* and *violates* the rules of action and environment. This can be exemplified by utterances that cannot be based on action, but are nevertheless used to structure our action. When I use an utterance such as “all people sin”, I disallow any alternatives. By making such a claim I close the scope of my environment. Moreover, claiming the sinfulness of all people I receive an impression of a total grasp of the nature of all people, despite the fact that not all people are present in my actual environment. Here the transcending power of language is not good for our cognition, as it closes the scope of our knowledge, stopping the investigation. It gives us a false impression of a total grasp of the world. Thus, we have also to distinguish and emphasize the scope of the environment where the language directs our actions. I cannot take actions out of the scope of my *Umwelt*, for example. I cannot perform actions upon the whole second order world, therefore I should be careful in making claims related to it.

Thus, when we use such words as “all” and “never”, we transcend the factual limits of our action. This often leads to controversy, as these words used in religious discussions leave no space for anything different than what is said in the utterance aimed to grasp “all” and “always”. This also leaves us no choice in relation to the religious truth other than between relativism and dogmatism. “All” and “always” close our scope and disallow alternatives. Thus, I suggest that the action-relation of language hints to us that we should clearly identify the scope of our actions and environment in relation to which we are making claims. This cautiousness could help us to avoid misunderstanding when we use the same words, which nevertheless belong to different action schemes in different environments.

³⁶³ Here by things I mean everything we can speak about and everything we can address in action.

9.2.5 Cognition revisited

I am going to complete my consideration of the relations among the parts of the triangle of cognition by revisiting the circumstances and limitations of cognition that I have uncovered previously. So, as we have seen, the consideration of cognition as embodied, embedded, extended, and enacted, and of the cognitive situation as tripartite, reveals certain structures and limitations affecting our knowledge and truth. To cognize, we have to select a comparatively small piece of information from the endless sea of ever-changing data. We need to address in action some point in our environment to perceive how the world opens for us in this action. And it is language that drives our cognitive actions. The character of action we take depends on “description”, if we use Anscombe’s term, and intended action is a part of an action-script. As our world is conceptualized, our environment is fine-tuned for our language-driven actions.

So I make the following inferences from the existence of such limitations and completion mechanisms for our cognition:

1. A human accesses the world from a certain embodied perspective only.
2. A human acts **in and via** environment. A human is not detached from action, environment or language. Instead, these are constitutive of agency and cognition.
3. Intersubjectivity, as was shown in chapter 3, does not help to bring all the perspectives of individuals together. We still need our environment to act.
4. The linguistic expressions should be considered as helping us to reach truth, but not as holding truth in themselves. As we access meaning in action, environment and action are also important for recognition of something as true.

As we are limited, when we cognize the world, we inevitably make it smaller to fit our need for survival actions and our abilities of comprehension and memory. Each human accesses only a certain aspect of the second order world and possesses only partial knowledge. Our actions uncover only some of the things and properties in the world, leaving the rest in the white spaces.

The second important effect of limitations is that we have some cognitive mechanisms preventing us from being aware of our limitations. Some of these mechanisms are rooted in language (“all”, “never”), others in the very ways that our perception (perceptual presence) and cognitive abilities (seeming wholeness of our knowledge) function.

Thus, on the one hand, human cognitive limitations are overcome by the mechanisms of “completion”. On the other hand, these mechanisms do not reveal the limits of our cognition and the white spaces in it. We just do not

feel the white spaces in our perception and knowledge, deeming our picture of the world complete. Due to the concerted functioning of the limiting and completing mechanisms the person does not perceive his or her lack and limitations of knowledge, as a blind person does perceive blindness as a disruption or an absence.³⁶⁴ The world seems grasped as a whole and known sufficiently, no matter how many things we overlook. But this also means that we can extend our knowledge and address the world in new actions, even if it seems to us that we know it wholly.

9.3 Truth in relation to the triangle of cognition

In this part I want to bring together all the results and conclusions of my work in order to apply them to the main goal of investigation: accounting for truth in religion. Thus, I am going to take a close look at the cognitive situation where we are looking for truth and the conditions of applications of our truth claims. While we can take some actions upon the language itself, usually we tend to figure out truth about reality not from the language, but from the actions in non-linguistic domains and their results. Thus, language relates our actions to reality so that these actions lead to knowledge without missing something. That is why we need to look for truth in the application of language to environment in action, but not in language itself.

I propose to consider the truth theories in relation to a re-conceptualized cognitive situation. In this part I will consider how the main theories of truth can be mapped onto the triangle model of cognition. Additionally, I will show how this model can contribute to our understanding of religious truth. Despite the fact that some truth theories presuppose the subject-object distinction, they tackle the same relations I intended to represent in a triangle and are based on the same folk intuitions about truth. Thus, as I have re-conceptualized the cognitive situation, I have to reconsider the theories of truth against it. Let us do it and see what happens.

Conceptualization of the classical theories of truth upon the triangle model of cognition might reveal the shortcomings of them and the possibility of their combination in one theory. Thus, I will consider the following theories of truth:

1. Correspondence theory of truth – a relation between environment and language.
2. Pragmatic theory of truth – a relation between action and environment, and language and action.

³⁶⁴ Noë, 2004, 3–4.

3. Truth as Aletheia – a pre-conceptual relation between environment and language, based on direct environment-action relation.

If we now look at Figure 4, we can see that no truth theory grasps all the aspects of the triangle of cognition. Aletheia and pragmatic theories of truth reveal two important connections. Also, we can see that the relation between language and action is the least accounted for by classical theories. Pragmatic theory accounts for this relation only in one simple sense: the success of action is decisive for claiming some linguistic expression as true. So pragmatic theory only states that this kind of relation (language and action) exists and is important for an account of truth, but it does not reveal the nature of this relation. In fact, particularities of this relation are clarified in the idea of meaning as a result of action driven by language, which I considered in chapter 8. Thus, the idea of meaning as action provides a necessary connection, making the account of truth in a triangle of cognition complete.

Truth in the triangle of cognition

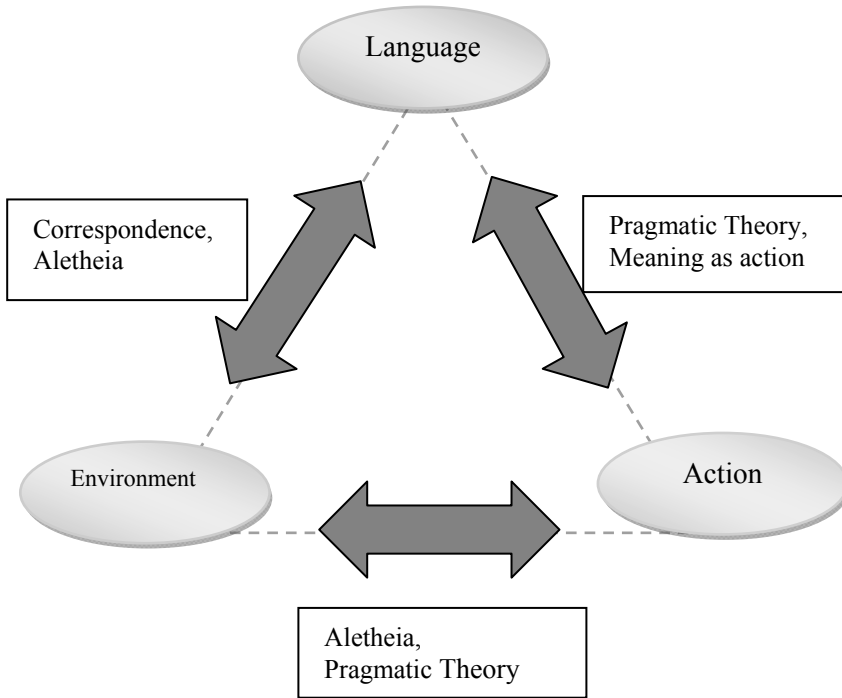


Fig.4

9.3.1 Truth as correspondence

The correspondence theory of truth is a classical theory. A basis for the theory of truth as correspondence between the states of affairs and the way we speak of them can be seen in Aristotle's statement: "To say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, and of what is not that it is not, is true".³⁶⁵ Some correspondence theories of truth suppose that reality is somehow represented in our speech (representationalism). Others suggest there must be something in virtue of which our propositions are true (theory of truthmakers). The representational approach to truth gives rise to objections, as it is not clear by virtue of what our propositions can correspond to reality. The nature of this relation is unclear. The theory of truthmakers keeps the idea of correspondence, but conceptualizes the relation as truthbearers (propositions, for example) and truthmakers (facts, for example).³⁶⁶

³⁶⁵ Aristotle, *Metaphysics*, 1011b25.

³⁶⁶ Soames, 1999, 13.

Classical correspondence theory focuses on language, but does not explain how language can represent anything that is “not of the same species”, as Heidegger puts it.³⁶⁷ Sentences and things are just not of the same type. Thus, the correspondence theory reveals an important intuition about truth but does not reveal the full picture. We have to account for the particularities of the environment we act upon due to a certain utterance, and for the action which is taken in this environment due to the utterance. The triangle model of cognition allows us to solve the problem of the way a sentence can relate to reality. It is human action that provides this relation.

As I have stated in the beginning of this chapter, language can also be taken as an environment of a special kind. Thus, it is possible to act within the limits of language following its specific rules in order to reach some clarity. Here we can map language as a set of rules and objects onto language as an environment to which we apply these rules. But I want to emphasize that language approached this way constitutes a specific environment. We should not be deluded by its abilities. Making conclusions within the domain of language we should keep in mind its white spaces, illusion of total grasp and the guidelines filling in the gaps of our cognition.

As we can see, correspondence theory accounts only for one kind of relation. The relation between environment and language is very important, but it should be complemented by other accounts, clarifying how exactly language relates to environment. A theory of meaning as the result of action driven by language, which I considered in chapter 8, provides such an explanation.

9.3.2 Truth in pragmatic theories

The pragmatist approach to truth accents this relation of the triangle of cognition: truth is determined as that which leads to the success of our actions. Thus, here the environment-action relation is emphasized, while the language-action relation is stated but not explained. From James’ point of view truth is the expedient. It is “any idea upon which we can ride.”³⁶⁸ Truths “lead to consistency, stability and flowing human intercourse. They lead away from excentricity and isolation, from foiled and barren thinking”.³⁶⁹ Thus, we have to approach any truth in experiential terms, evaluating its value for our wellbeing. It is the results of action upon the world that are decisive for truth-value. And the results of actions depend first of all on the particularities of the environment involved. It is, so to say, the response of the environment that is considered decisive in regard to truth. Language here functions mainly as a medium, having no importance in itself.

³⁶⁷ Heidegger, [1962] 1978, 259.

³⁶⁸ James, James, [1907] (1979), 30.

³⁶⁹ James, James, [1907] (1979), 103.

I conclude that in the same manner as the correspondence theory, the pragmatic theory of truth reveals an important intuition about truth as well. But it does not embrace the whole picture of cognition and truth in it. Pragmatism overlooks the role of language, the particularities of embodied and enacted language functioning, and its relation through action to environment. Thus, pragmatism focuses on one aspect of truth.

It is possible to apply the pragmatist notion of success to the triangle model and the idea of the actor as the center of action, language, and environment. The pragmatic account of truth reveals important striving for “consistency, stability and flowing human intercourse”, which is reached by truth. Thus, we can claim that every human, as a center of cognition, seeks the consistency and stability of all three parts of the triangle, which can be reached through balancing of the parts. As the world is in constant change and the three parts of the cognitive situation do not change synchronously, the balance is dynamical. This means that there can be no once-and-forever-reached balance or unshakeable stability. Balance is reached anew for the new configurations of the parts of the triangle of cognition.

The changes of some parts of the triangle (such as, for example, changes of the environment as a result of aging) require some actions and wordings to restore balance: we need new words to describe ourselves; we have to learn how to cope with our changed body. The resulting configuration of a system will be different, as balancing of the changed parts requires some new actions.

Thus, the utterances used to reach and secure the new balance might differ from those used before. In order to reach a balance we apply an action-script with its specific scope, goals and objects in our action upon the environment. If we then perceive that the mapping of the environment onto the objects is successful, the actions find their objects and the goals are reached, then we perceive that truth is obtained. Thus, the partial or general balance (depending on the demands of the environment) achieved between its parts is considered as a discovery of truth. So the pragmatic account of truth allows us to introduce the important idea of balancing between changing parts of the triangle of cognition. This idea accounts for the dynamics and diversities of truth, changes in beliefs, and truth claims.

9.3.3 Truth as Aletheia

There is also the phenomenological idea of an unmediated relation between language and the environment. Here I am going to consider truth as Aletheia – openness of the environment for us, as Heidegger puts it. He criticizes the correspondence theory of truth and representationalism, as they put an unnecessary mediator (representation) between language and the world. From his point of view, “the pointing-out has in view the entity itself and not, let us say, a mere ‘representation’ of it – neither something ‘merely represented’

nor the psychological condition in which the person who makes the assertion ‘represents’ it”.³⁷⁰ Thus, language directs us to the world, the entities in which are ready-to-hand. His vision of truth is based on an idea of the intimacy of language and our being-in-the-world. Thus, he accounts for the possibility of language to have meaning.

This possibility is provided by some basic embodied forms of intentionality. An example of pre-linguistic intentionality can be seen in skillful coping. Here we act by using the environment (such as the carving tool) and upon the environment (for example, a piece of wood), in such a way that the conditions are set up for success of our action. And there is no need for any representation of the process in our mind. A body relates to the instruments and the parts of the environment without any intervention of language. So this is a kind of pre-linguistic intentionality that allows language to be meaningful and truth to be revealed in language.

We can identify the position of pre-linguistic coping in the picture. But it nevertheless presupposes intentionality and thus, language is still present in the background of action, despite the fact that it is not directly involved in coping. Our environment is conceptualized and made ready for action by language-driven actions.

The Heideggerian account can be supplemented on the empirical level with the data showing that language understanding is embodied. We have considered the experiments and data revealing embodiedness of language in chapter 6. As language is embodied, and “built into” our environment, it allows “pointing out” and does not require representation. Studies of embodied, embedded, enacted, extended cognition have shown us that there is no need to make categorical borders between human mind, body, environment and instruments. In order to account adequately for cognitive action we have to consider all these parts acting together. Moreover, the studies of enacted understanding of language and the structure of language itself reveal how language permeates our body and actions.³⁷¹ Thus, I conclude that our body, environment, and instruments are structured so as to be ready for language application. And our language has a structure compatible with our action properties (image schema).³⁷² Hence, I can conclude that language permeates our environment. Thus, we easily apply linguistic utterances to the things experienced and act upon language in the world. As our environment is pre-structured and conceptualized for human actions driven by language, it is understandable that we can apply utterances to reach the environment. As we have seen, language plays a crucial role for our cognition. But as I suggest, it

³⁷⁰ Heidegger, [1962] 1978, 196.

³⁷¹ Glenberg, Havas, Becker, and Rinck, 2005; Glover, Rosenbaum, Graham, and Dixon, 2004; McGurk and MacDonald, 1976.

³⁷² Lakoff, 1987; Lakoff and Johnson, 1980; Johnson, 1987.

does not contain meaning in itself, as it only provides some tools and schemes of action.

Language drives our actions in an environment that is mapped suitably for the application of language. We learn to apply our actions to the environment in accord with language in the process of growing up. Thus, we are used to naming our actions and looking for naming of actions taking place in our mental and physical environments. The correct usage of words makes acting easier and integrates action into a whole action scheme. It alleviates the tension between our actions and the environment, enabling new actions, thus establishing balance and expanding the environment. A human is a center of balance of language, action and environment. In reaching balance the experiential aspect of cognition comes to the fore. For example, when we find the correct word for our mood, it helps us to handle this mood, opens this part of reality for our action and coping with it.

If we now turn back to the triangle model of cognition, we can see that the action part is not accounted for by the theory of truth as Aletheia. And I think that supplementing this theory with a special account of action can be fruitful. First of all, emphasis on action allows us to account for dynamics and changes of our truth claims. Accounting for action shows *how* the world opens for us, and how it might eventually open something completely different than what we deemed as true before. If action, as was shown in chapters 8 and 9, determines what we perceive and can change our knowledge of the environment, it plays a crucial role in language's relation to the environment. Language is embodied and our environment is conceptualized, but language is invoked in action (for example, speaking). Our relation with truth is not stable: we can discover new truths, or abandon something we held as true. This process requires embodied action, taking place in a conceptualized environment.

9.3.4 The action-environment relation

I have touched upon the issue of coping with the environment above. But I think that this account should be expanded, as there are some pre-linguistic revelations of truth. This kind of truth is especially important for religions. Revelation is usually not linguistic: mystics simply perceive it, instead of reading or listening to explanations. Nevertheless, revelation is held as having truth of the highest value. But this kind of state resists expression in words. Even if we try to do so, still we are unable to reach the same revelation. As we have reached this state not through language-driven actions,³⁷³ it is almost impossible to pave the way to it with words. Usually mystics can hardly express their experience in language. Mystics can try to invent new

³⁷³ Here I want to emphasize again that I use the word "action" as a technical term. Action involves conscious, unconscious, intended, non-intended and other layers.

words or signs, but in order to relate them correctly to their private experiences they need to construct some sort of “private language”. However, Wittgenstein has shown that private language is not intelligible.³⁷⁴ Thus, we can conclude that there are some important truth providing states, which resist expression in language. Nevertheless, we can again repeat that here language is present as a background, despite the fact that it is not directly involved in coping.

There are also some other kinds of truths based on direct action-environment coping. These are intuitions. Intuitive knowledge of the world is not obtained through mechanically following regular procedures. It is simply present at hand, as a result of our pre-linguistic coping. Intuition is the starting point of speculation and not the result of it. Any attempt to legitimize it by finding a rationale is in fact a reverse engineering: an endeavor to make a scheme of a working process. But coping with a specific environment is required for intuitive truths. It is quite clear why people having no access to a specific environment (math, for example) are unable to sense the intuitive truths of math.

On this level the criteria for truth are completely pragmatic: the lack of hindrances and the successes of my actions assure me that what I am doing is right. Intuitive truths can be expressed in language, but often they remain on the level of actions. I can intuitively sense that something is wrong and refuse giving my friend a key to my house. The reasons for my action can be obscure, and my refusal can be spontaneous and unexpected even to myself. The rationale for my decision can be inaccessible to me: I just feel the resistance to his request. Thus, I act upon intuition with no propositional truths present at hand. Perhaps, only later do I learn that my friend had become a drug-addict who was robbing houses. Then my reluctance will be understandable and my feelings, actions and the whole situation will be put in the form of linguistic expressions coherently explaining my behavior.

In fact, truths resulting from revelation do not require any justification, as they result from a direct coping with environment. Thus, pre-linguistic coping is an important part of truths, especially religious truth. This coping provides a basis for a subsequent language-based elaboration and reflection.

9.3.5 Truth reconsidered

Let us now take a look at the work done and make some conclusions. One of the most important inferences from the triangle model of cognition is the following: what considered theories of truth reveal to us can be conceptualized as *mutual relations between three parts of the triangle of cognition*.

Two parts are not enough for truth to emerge. We need to connect all three of them: actions, environment and language should be united leading to

³⁷⁴ Wittgenstein, *Philosophical Investigations*, § 241.

the tensionless relation among the parts. So if we combine the approaches of truth for a triangle model of cognition, we produce a picture of language-driven **actions** in the **environment**, which are successful, or at least encountering no insuperable hindrances. Here action–language relations provide meaning, and the environment is conceptualized in accord with our language. And of course, the language-driven action here is related to an action-script or a whole action scheme, which should lead to “consistency, stability and flowing human intercourse”, as James suggests. But the criteria of success or absence of hindrances are dependent on the environment where the actions are taken.

The next important conclusion is that truth is not something abstract “out there”. It is rooted in our intimate embodied coping with the environment. It can be revealed only in our embodied action with and in the environment. The relations between our actions and environment, our coping with various parts of it, precede the linguistic expression of truth, as Heidegger shows.³⁷⁵ Indeed, in order to express truth in utterances, we need some more basic experience of truth, which opens for us in our attentive action upon the world.

Thus, a basis for truth is the intimate pre-linguistic coping with environment, of which Heidegger speaks. Any linguistic expression requires this basis. If the truth does not resonate with our coping with our environment, we can accept it only as putative. For this reason truths of other people – or even groups of people – related to their experiences, will be always less evident, less justified than my own. If this truth has nothing to do with my life experiences and means nothing but words for me, why should I need it? For example, I can agree that Fermat's Theorem is true: no three positive integers a , b , and c can satisfy the equation $a^n + b^n = c^n$ for any integer value of n greater than two. But as I am not skilled enough in math, this truth is not rooted in my coping with an environment and I cannot use it for action in my experience. But if I study math, I thereby approach a new environment, where eventually this mathematical truth may become effectual for me. Or it may never become effectual for me, if I cannot develop any skills in math due to my psychological features.

Pre-linguistic experiences are the reason that religious revelations form such a strong basis for truth. They change our very environment and are rooted in our intimate coping, in basic intuitions about world and us. For the same reason it is hard to abandon or change religion, as it requires a total re-conceptualization and change of actions that a human takes.

Moreover, truth is *processual* or *dynamic*. As our world is in constant motion and changes, the balance between the parts of the triangle is dynamical. It can be eventually destroyed by radical changes (such as religious revelation) and should be restored anew, resulting in new understanding, expressed

³⁷⁵ Heidegger, 1992; [1930] 1998 136–54.

linguistically. Some of us tend to isolate ourselves in our once-reached truth. We strive to avoid entering new environments or taking new actions upon our well-known environment. On the one hand, this kind of behavior may seem unwise, as it prevents us from expanding our knowledge of truths. But on the other hand, it could be called a reasonable economy of resources. It is impossible to know everything. Moreover, each expansion of the environment demands adjustment of the other parts constituting our cognitive system. Thus, we have to find relevant linguistic expressions for our newly added parts of the environment or newly performed actions. We need to restore the former balance, upset by new actions or utterances or environments. Each of us humans has to cope with this tension between our limited cognitive abilities and the infinity of the world.

9.3.6 Religious truth and diversity

Here I am going to apply the triangle model of cognition to show new possibilities of accounting for truth in religion. My argument is that a consideration of the cognitive situation in terms of the relations between the three parts of the triangle of cognition clarifies the reasons for diversity of truth claims. However, how truth claims can be sustained or developed is a matter for religions and lies outside the frame of a philosophical investigation.

There are several consequences of the application of the triangle of cognition to the issue of truth. According to the scheme, the results of acting upon some utterance depend on the *characteristics of the environment* (including human body, social and cultural environment, skills, tools, etc.) and the *characteristics of the actions* taken. Language does not mean something on its own, but requires an action in the environment to be understood. And as we know, there are some parts of the environment we all share and some peculiar to individuals. For example, the results of certain simple physical actions taken upon stones are more or less the same, as they are taken on the parts of the environment we all can share. Thus it is quite easy to copy the simple action taken upon a stone by someone. So this part of the environment is quite rigid to nuances of actions and actors.

But other parts are not accessible to everyone. For example, I cannot act upon many mathematical objects, as due to lack of training in mathematics I do not have these objects as part of my environment. Or to give an even simpler example, I am the only one having direct access to my body condition. In addition, there are some parts of the environment that could be considered as flexible and highly sensitive to particular features of actions. As each actor inevitably uses the parts of his or her particular environment as instruments of action, the qualities of these instruments influence the results of actions. Thus, even when two humans ruminate upon the utterance “God is almighty” they act in distinct environments and might come to different conclusions about the meaning and truth of this utterance.

The next important consequence of an application of the triangle model originates in the *transcending* of the scope of our environment and action that language provides. Language is capable of directing a human's actions to something beyond the scope of "here and now", and this power is especially important for religion. This function of language is legitimate in a triangle model of cognition. For balancing the parts of triangle we can as well take a point that lies beyond our current scope.

Just as we need plans, dreams, and other things using language to transcend our current scope, we need religion, as it directs our actions to something beyond our everyday actions and simple objects we encounter in such actions. It is our way of transcending human predicament. Humans are always looking for something beyond, for the things we do not know yet, striving to overcome the limitations where we feel them. Thus, our language is a miraculous tool, which gives us freedom to move in time and space, speaking of tomorrow and a hundred years ago, atomic structure and eternity, but should be used with care. We should not forget that there are white spaces in our environment, which language hides from us. There are things that we do not know about, as we never approached them in action. There are possibilities of numerous diverse conceptualizations of the world, demanding different actions and yielding different environments.

But here we must also be cautious about usage of words giving the impression of a total grasp. It is insufficient to compare the linguistic parts of religions without accounting for the special actions in which these claims come to life. It is equally inadequate to speak of the environment of religious objects and goals, without accounting for the actions that reveal these objects and lead to these goals. Hence, we have to take religion as a whole system and account for its truth in a holistic manner.

Thus, I claim that we have to pay attention to the scope of the environment and the exact actions taken upon applications of truth claims. We should not be deluded by language's functioning, drawing no difference between the scope of a person's *Umwelt*, the entire second order world and the first order world. We have to clarify in what sense the words, stretching beyond the limits of currently available scope, such as "God", "eternity" or and "never", are used in a specific scheme. Otherwise we will encounter the problem of contradictory truth claims. As the religious truth claims quite often not only to stretch to "God" and "eternity", but also to invade the grounds of "all", "always" and "never", they inevitably start to clash. It is quite natural for a religion invading these grounds to claim that it is their only true possessor (exclusivism). But if we track the steps that are taken to reach these grounds, we can see that in fact these frontiers are not the same. They present the extensions of specific action schemes, such as extending the action scheme it is the only way to reach out to these grounds. Thus, in fact these are not the same grounds.

Moreover, there are lots of white spaces and possibilities in our action upon the world. They leave us a space of freedom of usage of various schemes. The triangle scheme shows us why there can be rival schemes, diverse truth claims and why they can be equally successfully applied in action in a particular environment. Thus, there is no need to invade the frontiers of “all” and “never” in order to close the scope of religion and expand it to the entire accessible environment. From the perspective of the triangle of cognition it is quite clear why there is a diversity of religious truth claims and why this diversity is inevitable. As the environments differ and people perform actions upon utterances differently, the truth claims are sound not for everyone, especially when it comes to the claims that lay beyond our current scope.

10 Summary

In this investigation I work with the aim of *conceptually re-approaching cognition in order to account for religious truth*. For that aim I reconsider our human cognitive situation from both conceptual and empirical perspectives. My revision shows that a dualistic manner of describing the cognitive situation is problematic for conceptual and empirical reasons, and leads to problems of accounting for diversity of religious truths and justifications of them.

I use observations from phenomenology as well as findings from cognitive science, linguistics, psychology, neuroscience, and philosophy of language. Here I firstly highlight the limitations of human cognitive abilities in comparison to the array of all the possible kinds of data to perceive and comprehend. Then I stress the ubiquity of language in our cognition, as language is related to our action and is embodied. Additionally I apply the findings of phenomenologically oriented research that shows that human cognition is embodied, embedded, enacted, extended and situated. This leads us to the conclusion that human cognition takes place within certain limits and is inseparable from language, body, environment, situation and actions humans take.

Such a picture we get dissolves the dualistic account of cognition in terms of the subjective and the objective. Thus, a new model should be provided. So I propose a re-conceptualization of our human cognitive situation in terms of a *triangle of environment, language and action*. Then I apply this model to the empirical observations and conceptual issues of cognition and conclude that the model satisfies the demands of conceptual clarity and has considerable explanatory power. It accounts for findings of embodied, embedded, enacted, and extended approaches to cognition and particularly conceptualizes the issues that Merleau-Ponty identified in terms of subject-object unity.

Finally, this model allows re-approaching the problem of truth in religion from a new perspective. As was stressed in the introduction, from within the dualistic model we cannot solve the problems of diversity and justification of religious truth. But a tripartite model, with its emphasis on the intimate action-environment relation, is capable of accounting for the diversity of religious truth claims, preserving the idea of truth in religion. As there are white spaces in our cognition, no account of truth can be exhaustive. Furthermore, this model explains that the properties of language give us a false impression

of total grasp and an illusion of complete knowledge and understanding of the world. Hence, the action-based approach to language gives us tools for accounting for the diversity of religious truth claims.

I have proposed several ideas in this investigation, which I consider the most important: the idea of a **triangle of cognition**, of **white spaces** in cognition, and accounting for meaningfulness in terms of **language relating to environment through action** (action-scripts), and **truth** resulting from tripartite relations. All these ideas are bound together, making a picture of our cognition as ongoing reconciliation and dynamic balancing between our limited cognitive capacities and the infinite ways of approaching the world in action. Cognition depends on which actions we take, thus there are infinite possible ways of approaching the environment in new actions, which allow us to disclose the world anew.

The model and ideas proposed in this investigation open possibilities for future inquiries. For example, it is possible to continue to develop the idea of white spaces and their role in cognition. Moreover, religious systems could be approached from the perspective of a triangle of cognition in order to promote the understanding of religious diversity. Also, I have only briefly considered issues of communication, but these can be re-approached on the basis of the triangle model of cognition. We can uncover the way people share perceptions and how these together constitute the shared world.

Finally, because of the actual situation in the world, I hope that the ideas proposed in this investigation will make a contribution to establishing mutual respect and understanding between religions and people with different, sometimes contradicting beliefs.

11 List of Papers

This thesis is based on the following papers.

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