

Alois Pichler, Herbert Hrachovec (Eds.)
Wittgenstein and the Philosophy of Information

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Alois Pichler • Herbert Hrachovec (Eds.)

Wittgenstein and the Philosophy of Information

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Preface

This is the first of two volumes of the proceedings from the 30th International Wittgenstein Symposium in Kirchberg, August 2007. It contains selected contributions from sections 1–3 of the symposium:

- Wittgenstein
- Wittgenstein und die digitale Wende – Wittgenstein and the digital turn
- Informationswissenschaft, Texttheorie und Hermeneutik im digitalen Kontext – Information science, text theory and hermeneutics in the digital context.

The second volume contains selected contributions from sections 4–6 and the symposium workshop:

- Medienphilosophie – Philosophy of media
- Philosophie des Internets / Philosophy of the Internet
- Ethik und politische Ökonomie der Informationsgesellschaft – Ethics and political economy of the information society
- Workshop: Elektronische Philosophie-Ressourcen und Open Source/Open Access – Electronic philosophy resources and Open Source/Open Access

The digital turn was the focus of this Wittgenstein symposium. For this reason alone, it was only natural to relate Wittgenstein research to a digital context, but even more so since Wittgenstein research and editing seem to have embarked upon digitality earlier than philosophical scholarship surrounding other philosophers.

A hot topic in current digital philosophy and digital applications is computational ontologies. The symposium has demonstrated the great value and provided positive examples of such ontologies, as well as voiced both criticism and caution. The present volume reflects this double aspect.

The philosophy of information has – since its beginnings in the last century – remained an attractive and growing field of research. This volume also contains new contributions in this field, ranging from more (mathematical) information theoretical to humanities and hermeneutical approaches.

We thank our contributors for a most enjoyable and fruitful cooperation and the Austrian Ludwig Wittgenstein Society for the opportunity to organize the anniversary 30th symposium under a theme which is timely as well as attractive to a public extending beyond a strictly philosophical community.

The Wittgenstein *Nachlass* facsimiles that appear on pages 128 and 132 stem from the *Bergen Electronic Edition* (Oxford University Press 2000) of the Wittgenstein *Nachlass* item MS 104 (“Prototractatus”, The Bodleian Library, item MS. Germ. d. 7). They are reproduced by permission of the Master and Fellows of Trinity College Cambridge, Oxford University Press, the Wittgenstein Archives at the University of Bergen and The Bodleian Library, University of Oxford, which we gratefully acknowledge.

The Wittgenstein *Nachlass* facsimile that appears on page 62 stems from the *Bergen Electronic Edition* (Oxford University Press 2000) of the Wittgenstein *Nachlass* item MS 144 (Trinity College Library). It is reproduced by permission of the Master and Fellows of Trinity College Cambridge, Oxford University Press and the Wittgenstein Archives at the University of Bergen, which we gratefully acknowledge.

We would like to thank Deirdre C.P. Smith (AKSIS, Bergen) for help with proofreading and Anne Lindebjerg (AKSIS, Bergen) for help with the layout.

Alois Pichler and Herbert Hrachovec
Bergen and Vienna, May 2008

Section 1:

Wittgenstein

Grammar and Silence

NEWTON GARVER, BUFFALO

1. Introduction

1. Wittgenstein's early masterpiece, *Tractatus Logico-philosophicus*, culminated in silence. The relentless steps of the search for clarity and meaning leads to the famous pronouncement of silence in the final sentence, "*Wovon man nicht sprechen kann, darüber muss man schweigen.*" Because Wittgenstein returned to philosophy some ten years later and worked persistently at philosophy for more than two decades until the end of his life, the question arises whether his return to philosophical work defied his earlier conclusion or had the effect of canceling it. His later philosophy continued his pursuit for clarity and meaning, but was dominated by what he called grammar rather than by logic. In view of this revision in the fundamental tools of his work, a useful specific form of the issue is whether making grammatical remarks, as Wittgenstein did in his later work of clarification, is a continuation or a rejection of the silence that his early work had led him into.

The plan of my paper is simple. I will first consider what is included and what is not included in the key terms 'silence' and 'grammar' as Wittgenstein used them, and then argue that restricting philosophy to grammar was a way of continuing the silence with which Wittgenstein so dramatically concluded the *Tractatus*. I will conclude with some reservations about adopting Wittgenstein as a role-model in this respect.

2. Silence

2. Wittgenstein's silence is not an absence of noise, nor even an absence of verbalization. The silence applies only to "what we cannot speak about", and Wittgenstein held that there are indeed things that we can speak about, namely matters of fact, which he equated with the domain of science. The distinction between philosophy and science is drawn sharply in the *Tractatus*,¹ and the silence applies to philosophy. This interpretation is uncontro-

versial, amply supported by the remarks immediately preceding the proclamation of silence:

The correct method in philosophy would be the following: to say nothing except what can be said, i.e., propositions of natural science – i.e., something that has nothing to do with philosophy – and then, whenever someone else wanted to say something metaphysical, to demonstrate to him that he had failed to give meaning to certain signs in his propositions. Although it would not be satisfying to the other person – he would not have the feeling that we were teaching him philosophy – *this* method would be the only strictly correct one.

My propositions serve as elucidations in the following way: anyone who understands me eventually recognizes them as non-sensical, when he has used them – as steps – to climb beyond them. (He must, so to speak, throw away the ladder after he has climbed up it.)

He must transcend these propositions, and then he will see the world aright. (TLP 6.53-6.54)

3. Wittgenstein does not make such a clear distinction between philosophical doctrine and philosophical clarification as he does between philosophy and science. Is there such a distinction? The passage just cited (TLP 6.53-6.54) suggests it. In response to a metaphysical claim, I am urged to demonstrate to the speaker that he has failed to assign meanings to some of his terms. Doing this seems to be both pointing out a kind of fact (though perhaps not a kind of fact that Wittgenstein recognizes in the *Tractatus*) and a part of the work of clarification.

In the central section of TLP (cited in Note 1) Wittgenstein says that philosophy is not a doctrine but an activity. What he says in 6.53-6.54 fits with this earlier description of philosophy. His wording, however, slides rather mischievously over the fact that this activity involves using words. It is true that the words are not used to state doctrines, and therefore they do not involve the sort of nonsense that Wittgenstein mainly objected to. The words used in the work of clarification have sense in so far as they state facts. But that a word has or does not have a meaning is not a matter of fact in TLP; it is something that can be shown but not said. On the other hand, it is difficult to conceive how the work of clarification can be pursued in

silence. So it is difficult to escape the conclusion that the work of clarification is neither something to be spoken of nor something to be consigned to silence.

The distinction between philosophical doctrine and philosophical activity seems useful in this connection. Wittgenstein seems content to continue the work of clarification but insists that we cease formulating theories and doctrines about it.

4. The sanction for violating the silence – for attempting to speak about what we cannot speak about – is to utter nonsense, that is, to utter words and sentences that fail to make sense. Uttering words that make no sense amounts to not really *saying* anything. Not saying anything is itself the same as remaining silent. Here Wittgenstein is playing with us, for in the ordinary sense of the words, speaking nonsense is quite different from remaining silent, even though it is not really *saying* anything – politicians do it everyday. So what looks as though it might be a syllogism, is an invalid argument, unless we grant Wittgenstein his special meanings for ‘saying’ and ‘silence’.

Granting the special meanings of ‘saying’ and ‘silence’, the conclusion of the *Tractatus* is less a moral injunction than a logical necessity. That my words fail to make sense when I attempt to speak about what we *cannot* speak about is a logical consequence rather than a moral duty. The ‘must’ in the final sentence is a logical rather than a moral ‘must’, in spite of the mystical tone and undeniable ambiguity of these words.²

5. It is useful to think of TLP 7 as a platitude or tautology, that is, as nothing more than a logical truth. The first implication of this reading is that the work of a philosopher will have no more relevance to matters of life and death than do *modus ponens*, *modus tollens*, and the principles of syllogistic inference. It is by recognizing and accepting these limits that philosophy becomes possible at all. This aspect of the *Tractatus* seems not only to flesh out but also to revise radically Wittgenstein’s pre-war remark that “Philosophy consists of logic and metaphysics: logic is its basis.” (NB 106) What happened between the *Notes on Logic* of 1913 and the completion of the *Tractatus* is that Wittgenstein came to realize that logic, being senseless, cannot be the *basis* for anything, so that any metaphysics presumed to be based on it must be nonsense.

6. The mysticism of the *Tractatus* is palpable and inescapable. It seems clear enough in his remark about seeing the world aright (TLP 6.54) but is more explicit in TLP 6.522: “There are, indeed, things that cannot be put into words. They *make themselves manifest*. They are what is mystical.”

7. There is a powerful tension, but no contradiction, between the logical analysis and mysticism in the *Tractatus*. There is, after all, even an element of the mystical in logic. Logic is not a science, the so-called proofs in logic are really psychological aids, and we can really only *show*, not *say why* (not even say *that*), a proposition is a logical truth. Whereas in the scientific philosophy of Russell and the Vienna circle logic serves as a tool for combating mysticism, in TLP logic and mysticism reinforce one another.

Wittgenstein thought the quest of philosophy was for clarification rather than for knowledge. His yoking together logical tautologies and moral principles, in that they both lack sense, suggests that he thought of the clarification provided by logic as closely identified with the clarification required by moral integrity, and hence that logical confusion was not only a sin but the most significant sort of sin.³ This is not a common perspective on either logic or morals, so it is no wonder that it disconcerted Russell. Being a philosopher meant adopting an unusual stance towards the world, assigning facts to scientists and morals to moralists, while as a philosopher remaining silent about both what is the case and what to do.

8. So Tractarian silence is both a logical truth and a moral commitment. It does not mean an absence of verbal utterances but rather abstention from truth-claims in domains other than the natural sciences. It is based on the insight that logic is not a science⁴ as well as on a deep understanding of how logical analysis leads to the clarification of the sense of propositions.

3. Grammar

9. Near the beginning of his second career, Wittgenstein wrote (CV 9) that his goal was clarity as an end in itself – *Klarheit als Selbstzweck*⁵ – and he proceeded to lay out over the years a conception of clarity radically different from the conception of analytic clarity developed in the *Tractatus*.

10. Being interested in clarity as an end in itself entails being disinterested (as a philosopher) in scientific and moral truth. Thus, as is well known, he steered clear of metaphysics and rational ethics (whether Kantian or consequentialist). Wittgenstein did make allowance in his work for certain factual truths that he came to regard as part of grammar. In *Grammatical Remarks* and *Philosophical Investigations* these truths were primarily remarks about language-games, and since mastering the use of a language is a feature of our complicated form of life, they also included remarks on the natural history of human beings (PI §25, §129). In *On Certainty* the range of allowances was broadened to include both the expressions that Moore thought he knew for certain and analogous platitudes, such as that his name is Ludwig Wittgenstein and that he has spent his whole life on or near the surface of the earth. With respect to metaphysical and moral truth, however, he made no such allowance. The distinction between seeking clarification and seeking knowledge, prominent in the *Tractatus*, is thus retained with emphasis in his later work.

In his later work he adopts a radically different conception of clarification (based on grammar and uses of language), a significantly different conception of science (based on knowledge and method rather than on the totality of factual truth), and a different conception of knowledge (excluding certainty but including theories and explanations). The new approach also features sharp distinctions between knowledge (which invites doubt) and certainty (which excludes doubt) and between science (which involves testing, explanation, and progress) and natural history (which is limited to description of plain facts).

It is difficult to hold all these conceptions and distinctions together in a coherent picture, and therefore no wonder that Wittgenstein crisscrossed the same territory again and again from different directions.

11. The conception of clarity that Wittgenstein developed in his later work was never made fully explicit, more often being shown than articulated. I will therefore try to highlight some of its prominent aspects.

12. One important aspect is that it is contextual rather than analytic.⁶ Clarity is rarely to be achieved by analyzing a complex into its constitutive elements and their distinctive arrangement. Reliance on context rather than analysis is shown most emphatically by Wittgenstein's repeated focus on the use or uses of words and sentences.

13. There are different sorts of use. Wittgenstein uses five German words that are translated as “use” in English versions: *Gebrauch*, *Nutzen*, *Benutzung*, *Verwendung*, *Anwendung*. In some instances the reference is to quite general usage (*Gebrauch in der Sprache*) and in others to the employment (*Anwendung*) of a word or sentence in specific circumstances. In every case, however, there is at least implicit reference to some context or other, rather than to analysis, for the work of clarifying meaning.

Wittgenstein begins his discussion with the most general, not with the most specific. His focus is on whole expressions; if these expressions are individual words, they stand alone as expressions rather than as elements in sentences.

14. The early sections of *Philosophical Investigations* culminate in §23:

How many kinds of sentences are there? Perhaps assertions, questions, and commands? – There are *countless* kinds: countless different kinds of use of all that we call “signs”, “words”, “sentences”. And this multiplicity is not something fixed, something given once and for all; rather new types of speech, new language-games, as we may say, come into existence and others wither away and are forgotten. (We can get a *rough picture* of this from the changes in mathematics.)

The word “language-game” is meant to bring into prominence that *speaking* a language is part of an activity, or of a form of life.

It is interesting to compare the multiplicity of the tools of language and the ways of their being used, the multiplicity of kinds of words and sentences, with what logicians have said about the construction of language. (Including the author of the *Tractatus Logico-philosophicus*.)

15. Here we see a focus on what we might call complete expressions, ones that stand alone as everyday utterances. They are different kinds of sentences, different uses of language, and their differences from one another are basic in the sense that they are not to be understood through analysis of their components. They are not ultimate wholes, about which nothing further can be said, but taking these wholes rather than their parts as basic constitutes a radical break with the mainstream of analytic philosophy.⁷

16. The focus on language-games, that is, on uses of language, is evident from the manner in which Wittgenstein begins the *Investigations* and is confirmed in later texts. At PI §656 he writes, “Look on the language-game as the *primary* thing.” In Part II (p. 226) he makes the intriguing observation, “What has to be accepted, the given, is – so one could say – *forms of life*.” This observations contrasts with usual conceptions of the given, which understand the given to be particulars or universals rather than anything so broad and undefined as *forms* of any kind.⁸

It is useful to conceive our human form of life, comprising as it does the mastery of the use of a language, as the large vague context within which the various language-games make sense. That large vague context makes possible an amazing range of human understanding. As Wittgenstein says (PI §206): “The common behavior of mankind is the system of reference by means of which we interpret an unknown language.”

17. It is difficult to see the distinctions among these uses of language, these language-games, as constituting a part of grammar.⁹ It is not grammar in the most common sense, since that consists of morphology and syntax. To understand him, therefore, we must see how his grammar differs from morphology and syntax.

18. The Swiss linguist Ferdinand de Saussure made a distinction that can help us. It is characteristic of morphology and syntax that they have to do with *langue* rather than *parole*, in the terminology of Saussure. That is to say, they concern the structure of language isolated from its use. Since language-games concern context and use rather than structure, they do not seem to be a matter of grammar in the common sense. That is one aspect of the difficulty.

Phonology, however, is also part of the general description of a language, and one branch of phonology, phonemics, focuses on *parole* rather than *langue*.¹⁰ Wittgenstein’s insistence on distinctions among language-games as fundamental to his work of clarification also involves primarily *parole* rather than *langue*. If we can see Wittgenstein’s work as having features in common with phonemics, it will be easier to see that it is a form of grammar.

19. Identification of elements of *parole* requires methods different from the primarily analytic methods of morphology and syntax. Two methods used

in phonemics to replace analytic definitions are *contrast* and *distinctive feature analysis*. Both these methods, which are not entirely independent, are prominent in Wittgenstein's later work.

The contrasts that matter in phonemics are not ones that *could* be made but ones that actually *are* recognized by speakers of the language in question. In English, for example, the phoneme /p/ is contrasted with /b/, and we recognize the difference between 'pet' and 'bet' and between 'sup' and 'sub', as well as that between 'limper' and 'limber', even when they are pronounced as isolated words rather than in context. In Arabic, on the other hand, this distinction is not phonemic, and the Arabic phoneme /be/ sounds sometimes like the one and sometimes like the other, so that 'Pepsi' is likely to come out as 'Bepsi'. Similarly, we do not notice that our phoneme /p/ is phonetically different in different contexts: its two occurrences in 'pop' and its still different occurrence in 'spot' are phonetically distinguishable and would likely be heard as different sounds in some Turkic languages.

What matters in this method is contrasts that are in fact significant in a given language rather than ones that could be significant. This focus on fact rather than possibility as primary is congenial with a strain in Wittgenstein's thought that is evident at the beginning of the *Tractatus* and continues throughout his work.

20. Wittgenstein once emphasized the importance of contrast by saying that he could use the line "I'll teach you differences!" (from *King Lear*) as a motto for his work. He made this remark in the context of commenting on the difference between Hegel and himself: "Hegel seems to me to be always wanting to say that things which look different are really the same. Whereas my interest is in showing that things which look the same are really different."¹¹ It is obvious contrasts that he refers to in PI §23; and again in PI §78:

Compare *knowing* and *saying*:

how many feet high Mont Blanc is —

how the words 'game' is used —

how a clarinet sounds —

If you are surprised that one can know something and not be able to say it, you are perhaps thinking of a case like the first.

Certainly not of one like the third.

Note that here, as elsewhere, Wittgenstein not only presents the extreme contrast between the first and third examples but also provides an intermediary case.

21. Sometimes Wittgenstein refers to distinctive features in order to make a contrast obvious. In distinguishing expressions of emotion from expressions of sensation, for example, he notes that although a pain might last only five minutes, one could not say that same thing about grief.¹² In this case the distinctive feature concerns what might be said next, as well as what is characteristic of emotions as contrasted with sensations. Possibilities of discourse continuation, and recognition that in some contexts a certain continuation is nonsense, are distinctive features of the grammar of language-games. “I christen this ship the Mary Belle” is a declarative sentence, but the response “I doubt that” would be nonsense in the normal circumstances of its use – a distinctive feature that shows that this declarative sentence is not a truth-claim.

Distinctive features help in recognizing and remembering contrasts.

22. Wittgenstein’s grammar thus differs from traditional grammar by extending the study of language from *langue* into *parole* and by focusing on context and use rather than on structure and analysis. Contrasting various kinds of utterances and inscriptions through distinguishing the different circumstances of their use and their different possibilities for discourse continuation is indeed part of a general description of language, and hence a part of grammar in the most general sense. Wittgenstein makes use of methods of grammar, especially methods of phonemics, but he applies them where grammarians and linguists have not commonly done so. Grammar lessons are perhaps normally somewhat therapeutic, and this is emphatically true for Wittgenstein, but modern linguistics aims at science rather than therapy. Although the confusions upon which Wittgenstein hopes to work his therapy of clarification are grammatical confusions embedded in the use of language, his remarks are philosophical rather than linguistic.

23. Wittgenstein’s later work makes use of grammar rather than logic, and context rather than analysis, in order to pursue his work of clarification.¹³ Grammar cannot be foundational in any sense. It is necessarily secondary rather than primary, since it depends on the prior existence of the language it describes. Nor can it lay the groundwork for wisdom about either the

physical world or our human world, since its subject-matter is language rather than the world or our behavior in it. In these respects Wittgenstein's later work of clarification is a refinement of the silence of the *Tractatus*.

Just as the silence was a logical conclusion rather than a moral exhortation, so also the remark that grammar is necessarily secondary, and hence philosophy can never be foundational, is a grammatical rather than a metaphysical or epistemological or moral observation. It is not that one *ought* not to lay philosophical foundations, but simply that if you are laying foundations you are, willy-nilly, playing some other game than that of philosophy.

4. The Power and Perils of Silence

24. The silence with which the *Tractatus* concludes is not broken in *Philosophical Investigations*, nor in other later work. The silence consists in focusing on the work of clarification and refusing all temptations to contribute to quests for knowledge or for causal or moral judgments or explanations.

Wittgenstein was adamantly opposed to the spirit of his times, that is, our times. He conceived our times as centered on progress and growth (CV 9) and dissociated himself and his work from moralism, scientism, and problem solving (CV 5-10 *passim*). He chided Renan for apparently supposing that science might enhance wonderment (CV 7) and certain architects for "succumbing to temptations" (CV5); and for those who think they have discovered solutions to problems of life, his contribution will be to show them how to see that they are wrong (CV 6). For philosophers the recommended asceticism consists in eschewing explanations, deductions, and theses, and limiting our work to "assembling reminders" and presenting descriptions of what is open to view "*before* all new discoveries and inventions" (PI §§ 126-128).

Since modern philosophy has focused on explanations, deductions, and overall solutions, Wittgenstein's stance on these matters is rightly seen as an effort to silence academic philosophers. Basing his work either on tautologies (TLP) or on grammar (PI) is a dramatic alternative – and a rebuke – to the search for certain knowledge characteristic of modern philosophy. This rebuke is a main feature of Wittgensteinian silence.

25. It is no surprise that few philosophers have accepted this rebuke without protest. To review the varieties of objections to Wittgenstein's philosophy is out of the question here, but it will be useful to take note of one rather friendly objection. Arnulf Zweig rebukes Wittgenstein for remaining silent about the Holocaust (Zweig 1997). Zweig makes this criticism not as a hostile critic but as an anguished friend. Others have pointed out that there are criticisms of Hitler and other moral judgments in Wittgenstein's notebooks and correspondence, and perhaps Zweig exaggerates. Nevertheless he has a point, and others concur that Wittgenstein's philosophy, and in particular his steadfast adherence to a search for clarity rather than for truth and justice, is unacceptably remote from the urgent problems of real lives.

This anguished criticism is cogent, but I hesitate to agree that it implies moral failure on the part of Wittgenstein. The silence might better be seen as philosophical integrity than as moral failure. Wittgenstein's mission was to work in philosophy, as an artist, and if he succumbed to the temptation of also (or thereby) being a moral beacon, he would be in the same position as the poor architects mentioned above (CV 5).

26. Clarity as an end in itself is something like the Holy Grail, radically removed from the problems of daily life and providing an almost impossible ideal. It is absolute, and not in any way conditional. This is in conformity with what Wittgenstein took to be the nature of philosophy (and logic). In continuing to pursue this ideal, Wittgenstein seems to have continued to see obscurity as a sin. His commitment to his work of clarification has an unmistakable religious dimension, a continuation of the mystical/prophetic dimension McGuinness identified in the *Tractatus*.¹⁴ When Wittgenstein remarked that he could not help approaching every problem from a religious point of view,¹⁵ he may well have been referring to this persistent dimension of his work.

27. As much as I admire Wittgenstein, as clearly as I see his later work as both continuing and revising the earlier work in its search for absolute unconditioned clarity, as certain I am that sound philosophy seeks clarification rather than knowledge, and in spite of the power and consistency of his continued Tractarian silence, I do not feel easy about joining Wittgenstein in either the absolutism of his commitment or the abstinence from moral and political comment.

In my book *Wittgenstein & Approaches to Clarity* one main theme is that in the course of my own work in philosophy I have always sought clarification for some other purpose, not as an end in itself. Those other purposes generally take the form of exegesis, advocacy, or criticism, for all of which rigorous clarity separates a thoughtful philosophical approach from a more passionate one. Perhaps all of this work of mine is applied philosophy, rather than philosophy proper. Nonetheless it remains heavily indebted to Wittgenstein, and in particular to his focus on language-games.

28. Wittgenstein writes, “There is only *logical* necessity.” I take that to be a logical or grammatical remark, grounded on the insight that genuine necessity is unconditioned in a way that only logic is unconditioned. If I echo this remark of Wittgenstein’s in the face of necessities asserted every day by politicians and moralists, is my utterance still a logical remark? or has it become preaching? or political commentary? That query is, in his terms, a grammatical question, on which he offers little guidance — except perhaps through the example of his persistent refusal to engage moralists and politicians, an example which I find breath-taking, but which, like Zweig and Russell, I do not find edifying. Nor does it seem required of a philosopher, unless a philosopher must have a singular public identity (such as Wittgenstein seems to have allowed himself¹⁶) and so cannot also publicly be a citizen or an essayist.

There seems no final answer to the questions of grammar and silence, any more than there is a final solution to the problems of life.

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Notes

1. See TLP 4.11: “The totality of true propositions is the whole of natural science (or the whole corpus of the natural sciences.” The distinction between science and philosophy is presented in the following sections, 4.111-4.112. The key points are: “Philosophy aims at the logical clarification of thoughts. / Philosophy is not a body of doctrine but an activity. / A philosophic work consists essentially of elucidations. / Philosophy does not result in ‘philosophical propositions’ but rather in the clarification of propositions.” [My slashes represent new paragraphs in Wittgenstein’s text.]
 There are problems with Wittgenstein’s way of making the distinction between science and philosophy (e.g., whether theoretical statements can have sense on his terms), and even issues (raised by Quine among others) whether any such distinction can be made. These are interesting issues and might usefully be discussed on another occasion. For my present purposes what matters is that Wittgenstein insisted on such a distinction in TLP, and in his later work held to there being a dichotomy, though he expressed it rather differently. See PI §109: “It was true to say that our considerations could not be scientific ones” and OC §308: “‘Knowledge’ and ‘certainty’ belong to different categories.”
2. So Wittgenstein’s apparent injunction to silence is a logical rather than a moral point, and therefore not an injunction at all. This comment depends on distinguishing logic from morals, and logical necessity from moral necessity, seemingly obvious distinctions that Wittgenstein may not have accepted at the time. The final pages of the *Tractatus* (from about 6.37 on) are full of cryptic and apparently edifying remarks that seem intended to give a perspective on life, what we naturally consider a *Weltanschauung*. This powerful rhetoric is integral to the power and mystique of the *Tractatus* and depends in part on not distinguishing logic from morals, as well as not distinguishing morals from religion.
3. See Shields 1993 for useful discussion of these matters.
4. See TLP 4.0312, where Wittgenstein characterizes this point as his “fundamental idea.” There is a useful discussion of this as the fundamental idea of Wittgenstein’s early work in McGuinness 2002, chapter 10.
5. Matthias Kross used this pregnant phrase as the title of his *Habilitationsschrift* (Kross 1993), which discusses these matters in depth. Wittgenstein’s own phrase is slightly but insignificantly different: “Mir dagegen ist die Klarheit die Durchsichtigkeit Selbstzweck.”
6. For further discussion of this point see Garver 2006, chapter 10.
7. But not necessarily with the *Tractatus* itself, where a name has meaning only in the context of a proposition (TLP 3.3).
8. It is not clear what Wittgenstein means by “forms of life.” I believe the term is intentionally vague and incapable of definition – see Garver 2006, chapters 10-12. It is nearly certain that he did not always mean language-games – see my discussion in chapter 15 of Garver 1994. With regard to the present text, there is an alternative wording in Wittgenstein’s notebooks, with “forms of life” [*Lebensformen*] replaced by “facts of living” [*Tatsachen des Lebens*], which makes it more likely that he meant to refer at least in part to language-games in this text. He certainly did think of language-games as facts of the natural history of human beings (see PI §25, §415, §§654-656, page 174c).

9. Moore, for example, did not understand it. See PO, 69: "I still think he was not using the expression 'rules of grammar' in any ordinary sense, and I am still unable to form any clear idea as to how he was using it." On the same page Moore reports Wittgenstein as having said that he was "making things belong to grammar that are not commonly supposed to belong to it."
10. The work of Ferdinand de Saussure (see Saussure 1959) made it possible to describe phonemes and to distinguish phonemics from phonetics, the latter but not the former being amenable to methods of physics. For a more practical and more readable account of phonemics, see Pike 1947, and for a good discussion of parallels between Saussure and Wittgenstein, see Harris 1988. I know of no reason to think that Wittgenstein had any familiarity with the work of Saussure or other modern linguists. Parallels between his work and that of linguists are fascinating as well as instructive, but they should not be carried too far. Linguistics is a science, a quest for knowledge, and Wittgenstein held himself aloof from every science, every quest for knowledge.
11. The remarks are reported by Maurice Drury (Rhees 1981, 171).
12. See, for example, PI page 174.
13. For a more extended discussion of philosophy as grammar, see chapter 13 of Garver 2006.
14. See McGuinness 1988, chapter 9.
15. He is quoted as having made this remark by Maurice Drury (Rhees 1981, 94). Malcolm discusses it in his last work (Malcolm 1994), which includes comments by Peter Winch. See also the comments by Elizabeth Wolgast in Wolgast 2004 and my comments in chapter 14 of Garver 2006.
16. One might construe Zweig's criticism as lodging the complaint that Wittgenstein, although identifying himself as Jewish, did so only privately; that is, that his singular public identity as a philosopher evaded publicly identified himself as a Jew, which would have obliged him to speak out about the Holocaust.

Medienphilosophie als ethisches Projekt? Vilém Flussers Wittgenstein

MATTHIAS KROSS, POTSDAM

Vorbemerkung

Vilém Flusser (1920–1991), in Prag geborener Jude, musste seine Heimat 1938 wegen der deutschen Okkupation verlassen. Er ging über London nach Brasilien. Obzwar Autodidakt, erhielt er in São Paulo eine Professur für Medienphilosophie. Seit Anfang der siebziger Jahre lebte Flusser wieder in Europa, vornehmlich in Frankreich. Mit seinen medienphilosophischen Arbeiten gewann er vor allem im deutschen Sprachraum schnell einen kaum zu überschätzenden Einfluss auf die noch junge Medientheorie und Medienphilosophie. Flussers zumeist verstreut erschienene Aufsätze und Gelegenheitsarbeiten, die erst postum zu Sammelbänden gebündelt und unter Kunsttiteln herausgegebenen wurden, darunter “Kommunikologie” und “Nachgeschichte”, lassen die in ihnen diskutierten philosophischen Positionen nur selten explizit erkennen. Hinzu kommt, dass Flussers Denken kaum von einem Streben nach Eindeutigkeit und Systematik gekennzeichnet war. Seine Begriffsverwendung ist stark schwankend und trifft sich nur gelegentlich mit dem geregelten Gebrauch im fachphilosophischen Diskurs. Immerhin lässt sich als Grundeinsicht Flussers eine Theorie der Medienevolution erkennen, die von einem Stadium der Bildlichkeit in eine Phase der Schriftdominanz übergeht. Diese wiederum wird seit der Entwicklung der elektronischen Medien von einer Periode der nulldimensionalen Digitalisierung abgelöst, die, obgleich artifiziell erzeugt, sich in ihrer Bilddominanz und Schriftferne als Rückkehr zur ersten Phase materialer Bildlichkeit darstellt und damit ihren wahren Charakter verhüllt. In der von diesen Medien selbst erzeugten Camouflage ihres Ursprungs sieht Flusser eine Bedrohung der Humanität und die Gefahr der existentiellen Selbstverfehlung des modernen Menschen. Diese Selbstverfehlung ist angesichts der “Bodenlosigkeit” der menschlichen Existenz ein Wesensmerkmal des Menschen, sie wird aber durch seine Verfügung über Medien

zumindest temporär sistiert. Erst mit der Selbstverbergung der Medialität des Daseins in den virtuell-realen Welten des digitalen Zeitalters droht die Bodenlosigkeit in eine abgrundtiefe Barbarei umzuschlagen, weil den Menschen die autonome Verfügungsmacht über das Medium zu entgleiten droht, sodass es sich gerade durch seine Anwendung und naiven Gebrauch gegen sie kehrt. Die Aufgabe des Medienphilosophen besteht laut Flusser folglich darin, im Sinne der Bewahrung der Menschlichkeit auf die seinsgeschichtlichen Abgründe der Entwicklung mahnend aufmerksam zu machen und mit der Aufklärung über diese Gefahren die Menschheit zu einem selbstbestimmt-emanzipatorischen Umgang mit diesen Medien anzuhalten.

Flussers Interesse an Wittgenstein richtet sich vor allem auf dessen im Tractatus (LPA/T) angestellten Untersuchungen zum Bildbegriff einerseits und auf das von Wittgenstein immer wieder hervorgehobene ethisch-existenzielle Darstellungsziel der Abhandlung andererseits. Im Folgenden wird nur auf einige der expliziten Bezugnahmen Flussers auf Wittgenstein referiert, da eine Rekonstruktion der impliziten Bezugnahmen Flussers aus den oben genannten Gründen auf nur schwer zu überwindende Hindernisse stoßen muss.

I.

Ludwig Wittgenstein, schreibt Vilém Flusser 1966 in seiner im Band 16 der *Revista brasileira de filosofia* erschienenen Rezension der *Philosophischen Bemerkungen (PB)*, sei eine “figura gigantesca” und zähle zu den bedeutendsten Denkern (“dos maiores pensadores”) des 20. Jahrhunderts, wenn nicht der Moderne überhaupt. Das zur Besprechung stehende Buch sei unzweifelhaft von erstrangiger Größe und verdiene daher eine eingehende Würdigung (Flusser 1966, 129).

Das Werk, das Flusser hier preist, erschien 1966 in einer zweisprachigen Ausgabe. Es enthält Auszüge aus den umfangreichen Aufzeichnungen Wittgensteins zwischen 1929 und 1930. Es gewährte dem Publikum erstmals einen genaueren Einblick in die Entstehungsgeschichte von Wittgensteins so genannter “Spätphilosophie”, die der nach Cambridge zurückgekehrte Philosoph etwa zehn Jahre nach Abschluss der Arbeiten an der *LPA* zu entwickeln begonnen hatte.

In seiner drei Seiten umfassenden Rezension lässt Flusser uns freilich diesen Zusammenhang, in dem die *PB* stehen, so gut wie nicht errahnen,

denn er ignoriert alle werkimmanenten Bezüge und Verwicklungen, die bis heute die Diskussion um Kontinuität oder Bruch in Wittgensteins Denken bestimmen. Er stellt vielmehr einen eher persönlichen Bezug zu dem Verfasser der *PB* her. Spricht Flusser über das zu rezensierende Buch, so spricht er sich über sein Verhältnis zum Autor aus und kommentiert das Gelesene mehr als dass er es referiert.

Dabei war in Brasilien kaum jemand besser geeignet als Flusser, sich zu einem Werk Ludwig Wittgensteins zu äußern: Er beherrschte schließlich die deutsche Sprache und vermochte daher die nuancenreiche und kunstvolle Ausdrucksweise Wittgensteins besser zu würdigen als andere, und zugleich waren ihm die Gedankengänge des Cambridger Philosophen aus eingehender Beschäftigung mit der (sprach)analytischen und logischen Philosophie vertraut. In seinem bis heute noch nicht ins Deutsche übersetzten Werk *Lingua e Realidade* (Flusser 1963, im Folgenden *LeR*) findet der Leser eine ausführliche Auseinandersetzung mit der *LPA*, wenn auch eingebettet in die kursorische Beschäftigung mit einer Myriade anderer kontinental-europäischer Philosophen – z.B. Dilthey, Cassirer, Misch, Lipps, Russell, Carnap, Mauthner, Husserl, Heidegger, Nietzsche, Frege oder Freud.

II.

In *LeR* ordnet Flusser Wittgenstein der Haupttendenz der europäisch-abendländischen Philosophie zu, die er im Wesentlichen als einen Dualismus von Positivismus und Existentialismus identifiziert. Der Medienphilosoph Flusser hat sich in *LeR* intensiv mit dem ontologischen Status von Bildern der Welt und den Weisen der Repräsentation von Tatsachen der Welt in Sprache auseinandergesetzt und dabei selbstverständlich auch die *Isomorphieannahme* Wittgensteins rezipiert. Aber es wird schnell klar, dass ihn dabei weniger deren formallogischer Gehalt interessierte, als deren Projektions-Status im Sinne eines Bilder-“Entwurfs” des Menschen. Deshalb beschäftigt er sich vor allem mit den Stellen der *LPA*, in denen jene von Wittgenstein selbst als “unsinnig” bezeichneten Sätze formuliert werden, mit denen wiederum transzendierend über die Beziehungen zwischen Welt und ihrem Bild in Denken und Sprache berichtet wird.

Für seine eigene Deutung des Bild-Begriffs der *LPA* identifiziert Flusser drei Aspekte und damit wichtige Punkte, die Wittgensteins Beitrag zur Medienphilosophie erkennbar werden lassen:

(1) Die sich in den Bildern von der Welt zeigende Logik ist zirkulär hinsichtlich ihrer Geltung; sie beruht daher auf einem Nichts.

(2) Sätze der Ethik (wie auch die der Ästhetik) sind für die Philosophie essentiell, aber sie sind unsinnig und lassen sich nicht sinnvoll in der positivistischen Sprache der Tatsachenlogik formulieren, da sie nicht auf das Verifikationsprinzip festzulegen sind. Wittgenstein: “Es ist klar, daß sich die Ethik nicht aussprechen läßt. Die Ethik ist transcendental.” (T 6.421)

(3) Die selbstgesetzte Aufgabenstellung der traditionellen Philosophie, nach letzter oder erster Begründung der Geltung von Weltbildern zu suchen, ist offensichtlich *absurd*. Sie ist erstens unerreichbar und zweitens überflüssig. Die Logik der Bilder *muss*, aber sie *kann* auch für sich selber sorgen, ist freilich auch bodenlos und nicht zu verteidigen, wenn sie in Frage gestellt wird.

Betrachtet man Flussers Auswahl, so fällt auf, dass er die Tragweite des *Tractatus* durchaus zu erkennen imstande war. Wittgenstein hatte ja mit der *LPA* den grandiosen Versuch unternommen, die Philosophie von dem Begründungszwang für die Abbildungsbeziehungen zwischen Welt und Bildern zu entlasten. Er hatte auf die Frage: Wie kommt die Wirklichkeit ins Bild und wie können wir sie aus ihm dann wieder entnehmen? die einfache – wenn auch sicherlich höchstproblematische – Antwort gefunden: weil Bilder – in welchen Zeichensystem auch immer sie komponiert sein mögen – logisch schon immer binär auf die Abbildung von Sachlagen in der Welt – mögen sie nun wirklich existieren oder nicht – ausgerichtet sind, so dass sie die Welt niemals verfehlen können. Wittgenstein glaubte daher keine metaphysische Vermittlungsinstanz mehr zu benötigen, die den sich im Abbildungsverhältnis offenbarenden Weltbezug ermöglicht und zugleich dessen Gelingen garantiert.

Anders als, wenn nicht sogar im Gegensatz zu, Wittgenstein – und in diesem *misreading* besteht sicherlich die eigentliche Originalität der Flusser’schen Lektüre der *LPA* – begreift Flusser in seinem *LeR* Bilder der Tatsachen oder gar der “Welt” stets als wirklichkeitserzeugende Projektionen, die aus einem existentiellen Entwurf hervorgehen. Dieser Entwurf, so deutet Flusser Wittgensteins Metaphysik-Verzicht, bleibt allerdings auf sich selbst gestellt, er geschieht vor dem Hintergrund eines “Nichts”.

III.

Dass sich der Leser der *LPA* nach der Lektüre in Schweigen hülle bzw. seinem Sprechen das Geschirr der verifikationistischen Alltagssprache anlege, immer auf der Hut, nichts Unsinniges zu äußern, mag Wittgensteins ethischer Wunsch für das rechte Verständnis seines Werks gewesen sein. Flusser hingegen nimmt den ethischen Anspruch des Verfassers der *LPA* in ganz anderem Sinne ernst. Wenn man mit Wittgenstein ästhetische und ethische Sätze aus dem Bereich des sinnvoll Sagbaren ausschließt, so Flusser, dann verkürzt man das Sprechen gerade um dessen wichtigste Aufgabe, in ihrem Vollzug die Spezifik der *conditio humana* zu bezeugen. Mit dem Eintritt des Menschen in eine symbol- und zeichenhaltige Austauschbeziehung mit der Um- und Mitwelt, also mit seinem Eintritt in die Bilderwelt, wird nämlich nicht allein pragmatisch eine Lebenswelt entworfen, sondern es wird ein „Kunstgriff“ – dieser Ausdruck Flussers ist hier ganz wörtlich zu verstehen – angewandt, um „die brutale Sinnlosigkeit eines zum Tode verurteilten Lebens vergessen zu machen“, also jenes *Nichts* zu bannen, das den „bedeutungslosen Kontext [anzeigt], in dem wir vollständig einsam und *incommunicado* sind“ (Flusser 1998, 10). Das Gespräch, die Kommunikation ist Welterschließung und Kulturstiftung; der Austausch erschöpft sich nicht im Gerede positiver Gegenstandsaussagen, sondern erschließt uns die Welt als Welt unter Einschluss von Schönheit und Moralität. Wohl hatte Wittgenstein das Ethische und das Ästhetische selbst als seine eigentliche, gleichsam als die *verborgene, Agenda* seines Buches bezeichnet (vgl. *B* 96f.), aber er hatte es dann, eben weil er die ontologische Dimension des Nichts auf eine bloß logische reduzierte, zutiefst verkannt. Deshalb, so Flusser, breche die *LPA* im Grunde in zwei Hälften auseinander: in einen logisch wohlabgesicherten, aber existenziell entkernten Part bloßer Tatsachenaussagen, und einen jenseits der Logizität angesiedelten, existentiell hochaufgeladenen Teil, der sich der Aussagbarkeit entzieht. Flusser sieht seine Aufgabe nun darin, beide Teile wieder zusammenzuführen. Wenn Wittgenstein ein solches Unterfangen als *absurd* bezeichnet – und er tut dies –, dann ist für Flusser diese Diagnose nicht *prohibitiv*, sondern gerade als *exhortativ* zu deuten: Es ist just diese Absurdität, die es ontologisch auszubuchstabieren gilt und damit eine ethische Chance bietet. Es gilt folglich für ihn, *mit* Wittgenstein *gegen* Wittgenstein gerade dort weiterzudenken, wo dieser dem Denken eine unüberwindliche Grenze ziehen möchte: beim Nichts und dem Absurden. Auf diese Weise lässt sich

laut Flusser jenes Auseinanderbrechen des Diskurses zwischen Positivismus und Existentialismus bei Wittgenstein vermeiden, dessen Überwindung gerade Wittgensteins ethisches Postulat an den Leser gewesen sei (vgl. auch Flusser 2006, 10).

IV.

In *LeR*, obwohl erst 1963 erschienen, findet sich kein Hinweis auf die 1953 erschienenen *PU*, die Wittgensteins Wende zu einer pluralistisch-pragmatischen Haltung zur Sprache markieren. Er kannte sie wohl zu diesem Zeitpunkt noch nicht. Die Grundidee der *Untersuchungen*, dass das Feld der Sprache unüberschaubar und in seiner Vielschichtigkeit von einer "geschlossenen" Philosophie nicht mehr zu erfassen ist, dürfte Flussers Einsichten in die Pluralität der sprachlich generierten Weltbilder vertraut gewesen sein. Allerdings ist Flussers Zugang zu Wittgensteins Spätwerk von der von ihm diagnostizierten Dichotomie Positivismus/Existentialismus in einem so hohen Maße überformt, dass er glaubte, das eigentlich Neuartige der Spätphilosophie im Vergleich zur *LPA* vernachlässigen zu dürfen.

Eine solche Vernachlässigung kennzeichnet jedenfalls Flussers bereits eingangs erwähnte Rezension der *PB*, auf die ich jetzt erneut zu sprechen kommen möchte. Ich hatte bereits eingangs erwähnt, dass Flusser, der Rezensent der *PB*, Wittgensteins sprachanalytische Detailstudien, die ja den eigentlichen Inhalt des Buches ausmachen, gänzlich beiseite lässt. Er konzentriert sich vielmehr ausschließlich auf das Vorwort, das er zunächst dem brasilianischen Leser in Gänze übersetzt:

Dieses Buch ist für solche geschrieben, die seinem Geist freundlich gegenüberstehen. Dieser Geist ist ein anderer als der des großen Stromes der europäischen und amerikanischen Zivilisation, in dem wir alle stehen. Dieser äußert sich in einem Fortschritt, in einem Bauen immer größerer und komplizierterer Strukturen, jener anderen in einem Streben nach Klarheit und Durchsichtigkeit welcher Strukturen immer. Dieser will die Welt durch ihre Peripherie in ihrer Mannigfaltigkeit erfassen, jener in ihrem Zentrum, ihrem Wesen. Daher reiht diese ein Gebilde an das andere, steigt quasi von Stufe zu Stufe immer weiter,

während jener dort bleibt, wo er ist, und immer dasselbe erfassen will. // Ich möchte sagen dieses Buch sei zur Ehre Gottes geschrieben, aber das wäre heute eine Schurkerei, d.h. es würde nicht richtig verstanden werden. Es heißt, es ist in gutem Willen geschrieben, und soweit es nicht mit gutem Willen, also aus Eitelkeit etc., geschrieben, soweit möchte der Verfasser es verurteilt wissen. Er kann es nicht weiter von diesen Ingredienzen reinigen, als er selbst davon rein ist. (*PB*, Vorwort)

In seiner Rezension geht Flusser auf den ‘positiven’ Teil der *PB* – die immerhin fast vierhundert Seiten umfassenden sprachanalytischen Detailstudien, die ja gerade das Neue in Wittgensteins philosophischem Ansatz ausmachen – mit keinem Wort ein. Vielmehr ruft er Wittgenstein als Kronzeugen gegen eine auf Hegel zurückzuführende “Fortschrittsideologie“ zunehmender “Versöhnung” von Welt und Bild auf, die sich aus der fortschreitenden Selbstmanifestation des Weltgeistes ergebe. Sodann nimmt er Wittgenstein ausdrücklich gegen Positivismus und Marxismus in Schutz. Wittgenstein sei keinesfalls ein reaktionärer Bourgeois oder ein bornierter analytischer Logiker gewesen, sondern ein Denker, der sich solchen Systemen verweigere, weil er die Haltlosigkeit, eben die *Absurdität*, aller Systemkonstruktionen erkannt habe, die sich, wie der Logiker Wittgenstein schließlich in der *LPA* überzeugend nachgewiesen habe, auf *nichts* zu stützen, oder besser: sich nur auf ein *Nichts* zu stützen vermögen. Im abschließenden Teil des *Vorworts* hat Wittgenstein laut Flusser dieses “Nichts” zum Ausgangspunkt für eine religiös eingefasste existentialistische Denkgeste genommen.

Freilich wird der Leser hier stutzen. Das “Nichts”, das ihm bereits in der *LPA* begegnet, wird von Wittgenstein dort als ein *tauto*-logisches bestimmt, keineswegs als eine ontologische Größe. Wenn Flusser in kühner Lektüre dieses *nicht* in ein *Nichts* verwandelt, lädt er die Logik ontisch auf und vollzieht damit eine gleichsam heideggerianische “Kehre”. Gerade dies geschieht aber in den *PB* nicht. Hier wird gerade der Versuch unternommen, das philosophische Nachdenken von jener ontologischen Verpflichtung zu entlasten, die es seit Platon und dem frühen Christentum gedrückt und zur Errichtung immer aberwitzigerer Denkgebäude getrieben hatte. Es ist gewiss kein Zufall, dass Flusser in seiner Rezension des Vorworts von 1930 den Existenzialisten Camus ins Spiel bringt, ohne zu berücksichtigen, dass dessen angesichts der Absurdität des Sisyphos ausgestoßenes, trotziges

Motto “quand-meme” erst mehr als zehn Jahre später erklang. Mit dem Alliierten Camus kann Flusser Wittgensteins Anliegen nun auf das in seiner Deutung Wichtige und Entscheidende reduzieren: Die im Vorwort zu den *PB* aufscheinende Geste, gegen das abendländische “Geschwätz” auf das Denkmögliche und Unsagbare – eben das allem Systemdenken vorausgesetzte *Nichts* – zu verweisen, offenbart, so Flusser, Wittgenstein als einen auf existenzielle *Authentizität* ausgerichteten Denker.

Mit einer solchermaßen verkürzten Deutung des Wittgenstein’schen Anliegens gelingt es Flusser, Wittgenstein erneut in das Denkschema einzuspannen, das er bereits in *LeR* herausgearbeitet hatte: Auf der einen Seite die Tradition der positivistischen Logik, auf der anderen das Motiv des existentialistischen Denkens, das sich trotzig dagegen behaupten muss. Am Ende seiner eingangs erwähnten Rezension der *PB* kommt Flusser denn auch, ohne Wittgensteins neuartigen sprachphilosophischen Ansatz auch nur zu streifen, wieder auf die *LPA* zu sprechen. Der Leser müsse diese Schizophrenie der Moderne in Richtung auf eine neue, wahrhafte Authentizität überwinden, wie sie der Wittgenstein von 1930 gefordert habe.

V.

Man wird kaum bestreiten können, dass Wittgenstein einige gute Gründe für eine solche existenzialistische Interpretation seines Denkens geliefert hat. Nicht nur in dem von Flusser besprochenen Vorwort-Entwurf von 1930, auch und vor allem in den Eintragungen in seine Notizbücher vor allem seit den dreißiger Jahren, die unter den Titeln *Denkbewegungen* und *Vermischte Bemerkungen* veröffentlicht worden sind, lassen sich zahllose “existentialistisch” anmutende Motive für sein Philosophieren auffinden. Zwar waren solche Bemerkungen gewiss nicht für die Veröffentlichung bestimmt, sie sind aber sicherlich ebenso ernst zu nehmen wie die sprachanalytische Arbeit in den Wortfeldern der Alltagssprache.

Flusser war bei seinen eigenen Studien (vor allem in *LeR*) immer von der überragenden Rolle der Sprache als Medium der Weltvergewisserung ausgegangen, auch wenn er – wie hier nicht weiter ausgeführt werden kann¹ – ein nur schwer konsistent zu denkendes, universalhistorisches Stufenmodell der Medien entwickelt, in dem die das Zeitalter der Sprachdominanz lediglich eine von insgesamt fünf Stufen ausmacht. Doch blieb Flussers Interpretation des Wittgensteinschen Werks immer von einer existenzialis-

tisch-ethischen Primäroption dominiert, der gegenüber die Arbeit der Sprachanalyse bloß technisches Beiwerk bleiben sollte (vgl. dazu auch Kroß 2007a).

Dafür möchte ich ein letztes Beispiel geben. In einem Typoskript mit dem Titel *Was der Fall ist* (TS 2503) beschreibt Flusser sein “Unbehagen”, das ihm der erste Satz der *Abhandlung*, die Welt sei alles, was der Fall ist, verursache. Denn wenn man diesen ersten Satz der *LPA* lese, führe kein Weg zu den folgenden Sätzen des Buches, sondern “die Gedanken kreisen um ihn herum [...]. Der Leser beginnt auf eigene Faust zu philosophieren [...]. Das ist der Fall einer philosophischen Liebe auf den ersten Blick.” Sodann beginnt Flusser mit dem Wort *Fall* zu spielen², das ihn zunächst zu den Wortfeldern leichter und schwerer Fall führt, die uns bei unserer Auseinandersetzung mit der Welt begegnen können. Das menschliche Leben wird dabei zu einem Schreiten von Fall zu Fall, geleitet von Zu-Fällen oder Ak-Zidentien, aus denen das Dasein zunächst zu bestehen scheint:

Die Welt der eingetroffenen Fälle: zufällig also. Aber die Welt der eingetroffenen Fälle: gelegentlich also. Die Welt als Zufall und die Welt als Gelegenheit, das ist die Welt der Fälle. Diese beiden Aspekte des Lebens zu vereinigen, ist das Thema des Lebens. [...] Wir müssen sie entscheiden. Fälle entscheiden heißt: veranlassen, daß sie von nun an nicht mehr eintreffen. [...] Wir wandern von Fall zu Fall, damit wir sie nach und nach entscheiden und Welt verarmen. Das ist unsere Freiheit: Fälle entscheiden. Entropie. Den zufälligen Fall als Gelegenheit für eine Entscheidung nehmen: Ziel und Sinn des Lebens. (TS 2503, 2)

Mit dieser existentiellen Exposition des *homo viator* als einem Wanderer nicht zurück in die Heimat des Glaubens, sondern in die *Entropie* (für Flusser einem Äquivalent des *Nichts*) führt Flusser den Leser zu der Überlegung, dass das von Fall-zu-Fall-Schreiten eigentlich ein Ver-Fallen, eine De-kadenz ist, die wiederum Ausdruck meines Falls als desjenigen, der nur mich angeht, ist. So gelangen wir mit der Meditation des ersten Satzes der *LPA* erneut zu jenem Existentialismus, den Flusser schon beim frühen Wittgenstein verorten möchte, um ihn zum Kronzeugen für die Philosophie der Bodenlosigkeit aufrufen zu können:

Wie weiß ich, daß ich ein Fall bin? Ich bezweifel, daß ich es durch die cartesische Methode wissen kann. Ich weiß, daß ich ein Fall bin, weil ich in mir meinen Verfall spüre. Ich weiß, daß ich ein Fall bin, weil ich falle. Ich weiß, daß ich falle, weil ich vom Tod weiß. Ich bin ein Fall, weil ich weiß, daß ich zum Tod falle. Dieses Wissen von meinem Tod erlaubt mir, das Gravitationsfeld, Welt genannt zu errahnen, in dem sich mein Fall abspielt [...]. (Ebd. 2f.)

Dieses Fallen zum Tod, das nicht von ungefähr an Heideggers Philosophie der Verfallenheit des Daseins an die uneigentliche Welt erinnert, wird für Flusser allerdings zum Ausgangspunkt jenes Entscheidens, in dem sich das Individuum gegen den Todespol wendet und sich auf seine Welt hin gegen den Tod entwirft. Selbstverständlich vermag sich das Ich aufgrund seines Gegen-Entwurfs nicht aus dem Fall zu lösen; der Todespol bleibt vorhanden, und seine Gravitation wird am Ende obsiegen. Insofern ist die Absehung vom Tod keine, wie Flusser schreibt, wirkliche Entscheidung, sondern ein Vorgang, der sich bereits ereignet haben muss, bevor er von einem Bewusstsein realisiert und *als* Entscheidung erkannt wird. Insofern kann er auch schreiben, dass diese Entscheidung “ohne Alternative” sei, denn das Leben ist nicht das “Gegenteil” des Todes, sondern die Verneinung des Todes:

Mein Wissen [von meinem Tod, MK] dringt in den Fall, der ich bin, ein wie ein leerer Sack. Infolge dieser Leere bin ich nicht gänzlich ein Fall.[...] Der Sack ist der Ort, wo ich mich entscheiden kann. Die Welt ist alles, was der Fall ist. Der Sack in mir ist kein Fall. Er nimmt an der Einheit, Welt genannt, nicht teil. Der Ort der Entscheidung ist nicht in der Welt. Ich entscheide mich und ich entscheide meine Fälle an einem Ort, der nicht in der Welt ist. Ist das Theologie?³

Meine Entscheidung ist gegen den Tod. Deswegen verwandelt er Fälle in Aufstieg und wendet die Schwerkraft der Welt um. Infolge meiner Entscheidung laß ich den Strom der Welt zurückfließen. Ich mache Kultur. (Ebd. 3)

Der Rückfluss des “Stroms” in die Welt der Kultur ist für Flusser ein neg-entropischer Vorgang, der – ganz im Sinne der Überlegungen Wittgensteins in der *LPA*, dass der Tod kein Bestandteil des Lebens sei und dass die

Motive für das Handeln, insbesondere die Ethik, außerhalb der Welt liegen müssen, gedacht – uns zu Kulturleistungen befähigt, die nicht mehr der Logik des “Falls” folgen, weil sie gleichsam in Abhebung und “jenseits”, also außerhalb, des Tatsachengefüges verortet werden dürfen. Die *Entscheidung gegen den Fall und für das Leben* als ein Akt der Selbsterschaffung und zugleich als ein Akt der Kulturstiftung ist aus diesem Grunde eine *genuin* ethische: *Nichts in der Welt sie uns aufzuzwingen vermag*, in der Deutung Flussers: *Das Nichts der Welt zwingt sie uns auf*.

VI.

Derart in das Haus der Ethik des Sich-Entwerfens heimgeholt, mutiert unter Flussers quasi-liturgischen Sprachkaskaden der Logiker und Sprachspieler Wittgenstein zu einem tiefsinnigen ontologisch besorgten Zeugen für den Un-Fall und den existenziellen Zu-Fall des menschlichen In-der-Welt-seins. Der Mensch steht für Flusser zwischen dem Akt des sprachlich-souveränen Selbst-Entwurfs und der Verfallenheit des unkommunikativen, weil aufs Positivistische beschränkten “Geschwätzes”. Wohl wird dieses Urdrاما des Un-Falls immer auf der Bühne der Sprache inszeniert, doch wissen die Akteure um den Abgrund des Nichts und des Todes, auf den sie unerbittlich zulaufen. Allein die Entscheidung zur bewussten und selbst entworfenen Kommunikation wird sie instand setzen, den Abstand zum Nichts wenigstens für eine Weile zu wahren.

Der Preis, den Flusser für eine solche existentialistisch aufgeladene Lektüre des Sprachphilosophen zu entrichten hat, ist freilich hoch. Wittgensteins anti-ontologische Sprachanalytik verliert ihre spielerische Geschmeidigkeit und gerinnt zu einem jener existentialistischen Seins-Entwürfe, die uns nicht nur als Produzenten von Bildern identifiziert, sondern uns darüber hinaus die Verantwortung für die Bild-Produktion aufbürdet. Weil wir uns sprachpositivistisch selbst verfehlen können, sehen wir uns laut Flusser der permanenten Drohung des Ver-Falls und damit des Rück-Falls in die Sprach-Barbarei ausgesetzt. Wittgenstein hat uns mit seiner Sprachkritik auf diese Gefahr aufmerksam gemacht; gebannt hat er sie am Ende nicht. Flusser hingegen sieht sich berufen, in seinen Büchern immer wieder vor diesem Ernstfall zu warnen und wirft sich zuweilen nachgerade zum apokalyptischen Mahner und Wächter der europäischen Tradition gegen die Entropie der neuen Medien auf. Der “Friede in Gedanken” und die Ruhe

des Herzens, die Wittgenstein sich von der Philosophie als “Arbeit an sich selbst“ erhofft hatte, sind, folgt man Flusser, eine trügerische Hoffnung – gerade weil ihr Erfolg ethisch ambivalent bleibt. Allein die immer wieder zu vollziehende ethische Entscheidung für ein selbstbestimmtes Sprechen, getrieben von einer neg-entropischen Anstrengung, bietet die Aussicht, unsere Menschlichkeit zu bewahren.

Für Flusser ist jeder Satz am Ende der Schauplatz eines existentiellen Dramas. Das Verschwinden der quälenden philosophischen Probleme, das sich Wittgenstein von der Sprachanalyse erwartete, ist unter solchen Umständen weder zu erwarten, noch überhaupt zu erhoffen.

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Endnoten

1. Vgl. dazu vor allem *K* 79ff.
2. Flusser weiß, dass seine Deutung nicht im Sinne Wittgensteins ist: “Die von der Etymologie vorgeschlagene Deutung [des Wortes ‘Fall’, MK] ist diese: Der Fall ist, was gefallen ist. Das Wort ‘Fall’ hat die Bedeutung von ‘fallen’. Diese Antwort taucht unsere Spekulation in [ein theologisches, MK] Klima [...]. Ich bezweifel, daß es Wittgensteins Ausgangspunkt ist. Das ist unbedeutend. Ist es nicht wahr, daß wir uns entschlossen haben, auf eigene Faust zu philosophieren?” (*TS* 2503, 1)
3. Flusser spricht in diesem Zusammenhang wiederholt von “protestantischer” Theologie (ebd. 1, 4), vermutlich nicht wissend, dass Wittgenstein getaufter Katholik war. Die Assoziation mit dem Sündenfall (und, vielleicht mit der Erbsünden- und Prädestinationstheorie des Augustinus, zu dem Wittgenstein offensichtlich eine starke intellektuelle Affinität besaß, vgl. Kroß 2007b) hätte Flusser gewiss zu analogen Meditationen führen können.

Psychoanalyse der grammatischen Mißdeutungen: Über die Beziehung Ludwig Wittgensteins zum Werk Sigmund Freuds

STEFAN MAJETSCHAK, KASSEL

1. Das ambivalente Verhältnis zu Freud¹

Gewöhnlich ist es schwierig, Wittgensteins Verhältnis zu den philosophischen oder literarischen Texten, die er – teils kritisch, teils zustimmend – als motivische Anregungen für sein eigenes Denken las, genau zu bestimmen und befriedigend zu interpretieren. Selbst wenn er die Namen der Autoren, mit denen er sich beschäftigte, in seinen Schriften explizit nannte, gab er oft keine Werktitel an, geschweige denn, daß er jemals präzise Textstellen seiner Bezugnahmen nach Maßstäben wissenschaftlicher Zitation angeführt hätte. Gelegentlich verzichtete er sogar auf jegliche Namensnennung selbst dann, wenn er einen Quelltext mit Anregungen für seine Überlegungen tatsächlich vor Augen hatte. Solchen Vagheiten in der Bezugnahme auf seine Lektüren – noch dazu verbunden mit Tatsache, daß der auf seinen “Boden” treffende “Samen” der Anregung aus ihm nach seinem eigenen Bekunden anders erwuchs, als “aus irgend einem anderen Boden” (VB, S. 500), was eine faktische Anregung oft gänzlich unerkennbar macht – ist es geschuldet, daß sich Fragen nach der konkreten Art und Weise, *wie* Autoren und Texte Einfluß auf sein Denken nahmen, kaum je mit philologischer Sicherheit entscheiden lassen.

Das ist auch im Falle von Wittgensteins Verhältnis zum Werk Sigmund Freuds nicht anders. Aus den Gesprächen, die Rush Rhees mit Wittgenstein über Freud geführt hat (vgl. VG, S. 61 ff.), weiß man immerhin, daß er sich zwischen 1919 und den späten vierziger Jahren mehrfach mit Freud beschäftigt hat und von dessen Schriften mindestens *Die Traumdeutung* (1900), *Zur Psychopathologie des Alltagslebens* (1904) sowie *Der Witz und seine Beziehung zum Unbewußten* (1905) kannte.² Zudem dürfte er mit Grundgedanken der *Studien über Hysterie* (1895), die Freud gemeinsam mit

Josef Breuer verfaßte und die sich in der Wiener Familienbibliothek der Wittgensteins befanden, sowie durch Gespräche mit seiner Schwester Margarethe, die sich bei Freud einer Psychoanalyse unterzog, mit einigen Aspekten der psychoanalytischen Behandlungstechnik bekannt gewesen sein.³ Demjenigen, der mit Freuds *und* mit Wittgensteins Schriften vertraut ist, werden zudem Übereinstimmungen zwischen beiden in anderen als den genannten Schriften auffallen; z.B. wird er bemerken, daß das Nestroy-Motto, das Wittgenstein der Spätfassung (TS 227) der *Philosophischen Untersuchungen* voranstellt, überhaupt habe “der Fortschritt das an sich, daß er viel größer ausschaut als er wirklich ist” (PU, S. 741), auch bei Freud zweimal Verwendung findet.⁴ Und noch einige andere Übereinstimmungen werden ihm nicht entgehen. Doch welche Texte Freuds Wittgenstein auch immer gekannt haben mag: *Wie* ihn seine Freud-Lektüre beeinflusste, *was* er an ihm schätzte und *was* er ablehnte, dürfte sich einer letzten interpretativen Klärung entziehen. Denn nach allem, was wir von Wittgenstein direkt oder durch die Vermittlung seiner Schüler indirekt über sein Verhältnis zu Freud wissen, läßt es sich – wie schon Bouveresse schrieb – nur als ambivalent⁵ bezeichnen.

Die Ambivalenz dieses Verhältnisses, die sich in Aussagen niederschlägt, die zwischen bewundernder Aufnahme und heftigster Ablehnung Freudscher Gedanken changieren, und die fast alle Wittgensteinschen Bemerkungen zu Freud auszeichnet, kommt noch in einem späten Brief zum Ausdruck, den Wittgenstein am 4. Dezember 1945 an seinen Freund und Schüler Norman Malcolm geschrieben hat. Darin heißt es über seine eigene Freud-Lektüre:

“I, too, was greatly impressed when I first read Freud. He’s extraordinary. – Of course he is full of fishy thinking & his charm & the charm of the subject is so great that you may easily be fooled.

He always stresses what great forces in the mind, what strong prejudices work against the idea of psycho-analysis. But he never says what an enormous charm that idea has for people, just as it has for Freud himself. There may be strong prejudices against uncovering something nasty, but sometimes it is infinitely more *attractive* than it is repulsive. Unless you think *very* clearly psycho-analysis is a dangerous & a foul practice, & it’s done no end of harm &, comparatively, very little good. (If you

think I'm an old spinster – think again!) – All this, of course, doesn't detract from Freud's extraordinary scientific achievement. Only, extraordinary scientific achievements have a way, these days, of being used for the destruction of human beings. (I mean their bodies, or their souls, *or their intelligence*). *So hold on to your brains.*" (GBW)

Hier wird der Psychoanalyse, deren enormen Reiz für viele er in diesem Brief ebenso wie andernorts (vgl. VG, S. 40 ff.) darin sieht, daß sie manifeste Handlungen und bewußte Gedanken auf unbewußte, meist sexuelle Motivationen zurückführt, die aller 'Anstößigkeit' zum Trotz unendlich viel anziehender als abstoßend wirkten, eine 'gefährliche und verdorbene Praxis' nachgesagt, der nur durch sehr klares Denken widerstanden werden könne. Doch von solch schädlicher Praxis bleibe Freuds 'außerordentliche wissenschaftliche Leistung' unberührt. Diese Briefstelle ist für den, der mit Wittgensteins sonstigen Äußerungen zum Werk Sigmund Freuds vertraut ist, zweifellos überraschend. Denn sofern Wittgenstein hier mit jener 'gefährlichen und verdorbenen Praxis' die therapeutische Praxis der Psychoanalyse meinen sollte, steht sie im Gegensatz zu zahlreichen seiner sonstigen Bemerkungen, in denen er umgekehrt gerade Freuds wissenschaftliche Leistung bestreitet, indem er – wie in Teil II kurz angedeutet werden soll – die von Freud konzipierte Ontologie des Unbewußten sowie den epistemologischen Anspruch der Psychoanalyse kritisiert, als naturwissenschaftliche Theorie zu gelten. Die Grundidee der psychoanalytischen Therapie dagegen – und dies zu zeigen ist im dritten Teil der vorliegenden Überlegungen mein Ziel – scheint ihm mindestens während der dreißiger Jahre eine Zeitlang geradezu als Modell seines eigenen Verständnisses von philosophischer Therapie vor Augen gestanden zu haben. Insofern ist die Einschätzung Freuds, die Wittgenstein brieflich gegenüber Malcolm abgibt, in seinem Nachlaß singulär.

2. Die Kritik an der psychoanalytischen Theorie

Wittgensteins Kritik an der Psychoanalyse im Sinne einer naturwissenschaftlichen Theorie über die unbewußten Regionen der menschlichen Psyche ist bereits häufiger thematisiert worden, so daß es hier ausreicht, seine Grundeinwände kurz zu erinnern. Sie beziehen sich allesamt auf Freuds rekurrent erhobenen Anspruch, "wissenschaftlich zu sein. Aber was er lie-

fert”, sagte Wittgenstein, “ist *Spekulation* – etwas, das sogar der Formulierung einer Hypothese vorausgeht.” (VG, S. 65)⁶ Tatsächlich hat Freud seine Grundbegriffe ebenso wie seine grundlegenden Einsichten in die sog. ‘Mechanismen’ der menschlichen Seele ja nicht im entferntesten durch Verfahrensweisen gewonnen, die unseren Maßstäben für Wissenschaftlichkeit in den sog. Naturwissenschaften genügen. Denn er gelangt zu ihnen nicht durch quantitativ basierte und experimentell angelegte empirische Untersuchungen, sondern durch qualitative Ausdeutungen von Gesprächen, die er mit seinen Patienten während der Behandlungssituation geführt hat. Konkret bedeutet dies z.B. im Blick auf Freuds seinerzeit Aufsehen erregende Theorien über die infantile Sexualität, daß er – wie er selbst übrigens eingesteht – den behaupteten “Inhalt der sexuellen Kindheit aus den Analysen Erwachsener, also zwanzig bis vierzig Jahre später, erschlossen”⁷ hat! Und Erinnerungen, die in psychoanalytischer Behandlung befindliche Neurotiker und Hysteriker an Jahrzehnte zurückliegende Ereignisse zu haben behaupten, wird man wohl kaum als empirische Belege für Theorien über die Verfassung der kindlichen Sexualität gelten lassen. Im Gegenteil; Theorien, die auf solch fragwürdigem Datenmaterial basieren, wird man wahrscheinlich nicht einmal als begründete Hypothesen betrachten wollen. Gemessen an unseren üblichen Kriterien für die Wissenschaftlichkeit einer Theorie sind Freuds Behauptungen insofern tatsächlich nichts als bloße Spekulation.

Wenn Freud auf einer solch fragwürdigen Datenbasis die psychologischen Gesetze zu deuten unternimmt, die den Äußerungen und Handlungen seiner Patienten angeblich bewußt und unbewußt zugrunde liegen, erliegt er zudem einer permanenten, wissenschaftstheoretisch gesehen höchst fragwürdigen “Verwechslung” (V, S. 197) von Ursachen und Gründen.⁸ Um Ursachen geht es in naturwissenschaftlichen Theorien, die an der Ermittlung von Kausalzusammenhängen interessiert sind, und die “Ermittlung einer Ursache” wird gewöhnlich “experimentell durchgeführt” (V, S. 198). Von Gründen dagegen ist in Diskursen die Rede, in denen es um die Motivation von intentionalen Akten geht, z.B. wenn jemand Auskunft über die Motive seines bewußten Handelns gibt, und zur “Ermittlung eines Grundes gehört als wesentlicher Bestandteil die Zustimmung des Betreffenden” (ebd.). Experimentelle Verfahrensweisen spielen hier gar keine Rolle, denn wenn man die handlungsmotivationalen Gründe einer Person herausfinden will, kann man nichts anderes tun, als sie zu fragen, welchen Grund sie hatte bzw. ob sie einem vermuteten Grund zustimmt oder nicht. Indem

Freud Ursachen und Gründe aber konfundiert und z.B. im Zuge der Erörterung der Frage, was die manifesten Erscheinungsformen von Fehlleistungen oder Träumen bedingt, mit dem Konzept der kausalen Wirksamkeit unbewußter Motive operiert⁹, werden die Verifikations- und Falsifikationsbedingungen für seine Analysen unklar. Denn es ist ja nun nicht klar, wann und auf Grund welcher Belege man eine Aussage über kausal wirksame, unbewußte Motive überhaupt als richtig oder als wahr betrachten soll. Obgleich Kausalzusammenhänge zwischen unbewußten Motiven und manifesten Gestalten von Träumen oder Fehlleistungen behauptet werden, gibt es in diesem Falle ja gar keine Möglichkeit der experimentellen Überprüfung solcher Behauptungen. Und auch unser übliches Kriterium für die Rechtmäßigkeit von Behauptungen über die motivationalen Gründe einer Person – nämlich ihre Zustimmung – läßt Freud nicht immer gelten. “Manchmal”, bemerkt Wittgenstein, “sagt er, daß die richtige Lösung, oder die richtige Analyse, die ist, die den Patienten befriedigt” (VG, S. 63), der er zustimmt oder die sein Problem beseitigt. “Manchmal sagt er” aber auch, “daß der Doktor weiß, was die richtige Lösung oder Analyse [...] ist, wohingegen es der Patient nicht weiß: der Doktor kann sagen, daß der Patient sich irrt.” (ebd.) Im Blick auf Freudsche Analysen, die mit dem begrifflich außerordentlich verwirrenden Konstrukt von kausal wirksamen, unbewußten Gründen operieren, kann man darum wohl nur sagen: Richtig oder wahr ist hier stets diejenige Analyse, die dem Analytiker jeweils als richtig oder als wahr erscheint. Unabhängige Verifikations- oder Falsifikationsinstanzen existieren für solche Analysen ja nicht. Und darum hat man es bei den im Grunde einwandsimmunen Behauptungen Freuds auch nicht mit wissenschaftlichen Aussagen zu tun, denen wir – wenn schon nicht Verifizierbarkeit, so doch – seit entsprechenden psychoanalysekritischen Argumenten Karl Poppers, mit denen sich Wittgensteins Überlegungen berühren, mindestens Falsifizierbarkeit abverlangen.¹⁰

Doch damit nicht genug: Im Zuge seiner Kritik verweist Wittgenstein nicht nur viele sich als wissenschaftliche Einsichten gebärdende Theoreme der Psychoanalyse in den Bereich der Spekulation; er stellt zudem die gesamte Ontologie des Unbewußten in Frage, unter deren Voraussetzung sich die Psychoanalyse formiert, indem er *prinzipiell* bestreitet, daß Freud unter dem Namen des ‘Unbewußten’ eine bis dato unbeachtete Region der menschlichen Psyche entdeckt habe, deren Dynamik und deren interne Gesetzlichkeit wissenschaftlich erforscht werden kann! Im Blick auf Freuds Theorie im Ganzen meint Wittgenstein nämlich zeigen zu können, die für

Freud zentrale Theorie des Unbewußten sei gerade “das Unbefriedigende daran.” (V, S. 197) Natürlich: Wittgenstein weiß sehr wohl, daß “Freud behauptet, in den Erinnerungen” seiner Patienten, “die durch die Analyse ans Licht gebracht werden, Beweise” für die Existenz des Unbewußten “zu erhalten.” (VG, S. 63 f.) Und er weiß als Kenner Freuds natürlich auch, daß Freud in seinen Schriften mehrfach im Sinne eines *argumentum crucis* “sagt, wer das Unbewußte leugnet, könne” unter anderem “die posthypnotische Suggestion” nicht “erklären” (V, S. 197), von der Freud meint, daß sie die “Existenz und Wirkungsweise des seelisch Unbewußten bereits vor der Zeit der Psychoanalyse sinnfällig demonstriert”¹¹ habe. Die posthypnotische Suggestion – zur Erinnerung: das Phänomen, daß jemand im Wachzustand für ihn selbst unerklärlicherweise Handlungen ausführt, die ihm unter Hypnose suggeriert wurden – sei nämlich unerklärlich, wenn man nicht ein im Wachzustand wirksames Unbewußtes voraussetze. Doch weder der Rekurs auf die Erinnerungen der Freudschen Patienten noch das Phänomen der posthypnotischen Suggestion können Wittgenstein für Freuds Theorie des Unbewußten einnehmen.

“Was Freud über das Unbewußte sagt”, so führte er in einer Vorlesung der Jahre 1932/33 aus, “klingt wie Wissenschaft, aber eigentlich ist es bloß ein *Mittel der Darstellung*. Es sind keine neuen Regionen der Seele entdeckt worden, wie seine Schriften suggerieren.” (V, S. 198; vgl. V, S. 164) Vielmehr hat Freud in Wittgensteins Sicht nichts anderes getan, als in seiner Theorie eine neue Sprache – eben ein neues Mittel der Darstellung – einzuführen, die dort, wo wir gewöhnlich davon sprechen, daß etwas ‘unbewußt’ sei, die Phänomene durch einen substantivierten Gebrauch des Wortes ‘unbewußt’ beschreibt, der *das* ‘Unbewußte’ nun in geheimnisvoller Weise als das Subjekt eines psychischen Geschehens erscheinen läßt. Wenn wir z.B. im gewöhnlichen Sinne davon sprechen, daß jemandem “der Grund” seines Handelns “unbewußt war”, so ist dies nach Wittgenstein eine bloße “Redensart” (ebd.). Denn gemeint ist damit natürlich nicht, daß der Grund in irgendeinem Sinne *in* jemandes Unbewußtem (wie in einem Behälter) enthalten war, sondern nur, daß er ihn zum Zeitpunkt des Handelns nicht ausdrücklich vor Augen hatte, doch später vielleicht zuzugeben bereit ist, daß dieses oder jenes der Grund seines Handelns war. In diesem profanen Sinne kann man über die Gründe, die jemand für sein Handeln hat, z.B. sagen: ‘Als er seinen Regenschirm verlor, war ihm nicht bewußt, daß er ihn eigentlich loswerden wollte.’ Und zwar ohne sich damit bereits auf eine psychoanalytische Theorie der Fehlleistung zu verpflichten. Oder um ein

weiteres Beispiel zu verwenden, könnte man in ähnlichem, ebenso profanem Sinne über einen Menschen auch sagen: ‘Er wollte unbewußt seinen Vater töten’, und es kann sein, daß derjenige, der seinen Vater durch seine Handlungsweise vielleicht tatsächlich in Lebensgefahr brachte, dieser Begründung dann später zuzustimmen bereit ist. Doch Freuds Idee war es, einen Sachverhalt, den wir im alltäglichen Sinne mit dem Satz ‘Er wollte *unbewußt* seinen Vater töten’ beschreiben würden, prinzipiell mittels einer Formulierung wie ‘Sein *Unbewußtes* veranlaßte ihn, seinen Vater töten zu wollen’ darzustellen.¹² Damit führt er eine neue Darstellungsweise ein, in der ‘das’ substantivierte und an die Subjektsstelle des Satzes gerückte ‘Unbewußte’ nun plötzlich als das geheimnisvolle Subjekt einer nicht bewußten Intention erscheint. Doch dieses substantivierte “Unbewußte” ist natürlich, wie Wittgenstein sieht, “eine hypothetische Wesenheit” (ebd.), für deren ontologisch eigenständige Existenz und Wirksamkeit Freud keinen Beweis erbringen kann. Weil Freud jedoch glaubt, daß *seine* Darstellungsweise für das Verständnis der menschlichen Psyche aufschlußreich sei, versucht er, seine Leser ebenso wie seine Patienten zur Akzeptanz dieser neuen Darstellungsart – und mit ihr zu einer neuen Sicht auf das Verhalten und die seelischen Reaktionen des Menschen – zu *überreden*.

Genau das ist es, was Freud nach Wittgenstein in allen psychoanalytischen Deutungen beständig tut. “Wenn du durch Psychoanalyse” beispielsweise “dazu geführt wirst zu sagen, daß deine Gedanken in Wirklichkeit die und die waren, daß dein Motiv” zu einer Handlung *unbewußt* “in Wirklichkeit dies oder das gewesen ist”, heißt es in diesem Sinne in Vorlesungen des Sommers 1938, “dann handelt es sich nicht um einen Fall von Entdeckung, sondern von Überredung.” (VG, S. 43) Wenn sie gelingt, dann nicht, weil sie in irgendeinem Sinne auf unabhängige Beweisgründe Bezug nehmen könnte, die für die Richtigkeit der dargebotenen Deutung sprechen, sondern darum, weil die psychoanalytische Darstellung ein *bestimmtes* Bild vom Menschen zeichnet – das “Bild vom Menschen mit unbewußten Gedanken” –, das zu akzeptieren für viele “reizvoll” (VG, S. 41) erscheint. “Ein Bild”, wußte Wittgenstein, kann nämlich

“an sich faszinieren und sich uns zum Gebrauch aufdrängen ganz unabhängig von Richtigkeit und Unrichtigkeit. So ein Bild entwirft die Psychoanalyse und es wäre interessant seine Macht durch Überlegungen, ähnlich denen der Psychoanalyse, zu erklären.” (MS 163, S. 69)

Es evoziert die "Vorstellung einer Unterwelt, eines Geheimkellers" (VG, S. 41) der menschlichen Seele. "Etwas Verstecktes, Unheimliches" (ebd.) wird durch dieses Bild für das manifeste Geschehen, das wir vor Augen haben, verantwortlich gemacht. Und die Welt unter dem Gesichtspunkt zu sehen, daß alles anders ist, als es auf den ersten Blick scheint, hat für viele Menschen eine unerhörte Anziehungskraft. "Am Ende", sagte Wittgenstein mit einigem psychologischen Scharfblick, "vergißt du völlig jede Frage nach Verifikation" solcher Behauptungen und "bist nur sicher, daß es so gewesen sein muß." (VG, S. 43) Doch wird durch ein solches Bild natürlich nichts bewiesen.

Freud glaubte sehr oft, die mythologischen Erzählungen der Menschheit als Belege für seine Theorien anführen zu können, ja er meinte sogar, "das Mythologie und Märchenwelt überhaupt erst" durch seine Theorien "verständlich werden."¹³ Doch statt die Mythen der Menschheit zu erklären, hat Freud nach Wittgenstein "etwas anderes getan. Er hat keine wissenschaftliche Erklärung eines Mythos gegeben. Er hat vielmehr einen neuen Mythos geschaffen." (VG, S. 73) Denn mit seiner spekulativen Lehre vom Unbewußten sowie von den psychischen Instanzen *Es*, *Ich* und *Über-Ich*, wie er sie seit *Das Ich und das Es* von 1923 vertreten hat, hat er ein wirkungsmächtiges und – wie jedes mythologische System – empirisch unwiderlegbares System zur Beschreibung und Interpretation der menschlichen Psyche eingeführt. Und man müsse, wie Wittgenstein meinte, "einen starken, scharfen und beharrlichen, kritischen Verstand haben, um die Mythologie, die angeboten und aufgezwungen wird, zu erkennen und zu durchschauen." (VG, S. 74) Denn scharfsinnig und geistreich, wie Freud psychische Phänomene mit seinen Darstellungsmitteln beschreibt, ist man nur allzu leicht "verleitet zu sagen 'Ja, natürlich, so muß es sein.' (ebd.) Doch einen Verstand, der dem widersteht, haben bekanntlich nur wenige, und deshalb habe

"Freud [...] durch seine phantastischen pseudo-Erklärungen (gerade *weil* sie geist-reich sind) einen schlimmen Dienst erwiesen.

(Jeder Esel hat diese Bilder nun zur Hand, mit ihrer Hilfe Krankheitserscheinungen zu 'erklären'.)" (VB, S. 527 / Herv. S.M.)

3. Psychoanalytische Behandlungstechnik und philosophische Therapie

Führt man sich Wittgensteins skizzierte Kritik an den theoretischen Grundlagen der Psychoanalyse, insbesondere seine Auseinandersetzung mit dem für sie zentralen Begriff des Unbewußten, in ihrer ganzen Radikalität vor Augen, dann ist es eigentlich überraschend, daß er Freuds Theorie gleichwohl *nicht* mit Bausch und Bogen als unwissenschaftliche Mythologie verdammt, sondern andererseits doch *auch* betont, allen Freudschen Irrtümern und allen “seinen Charakter” betreffenden Schwächen zum Trotz, die Wittgenstein finden zu können glaubte, sei “an dem[,] was er sagt”, dennoch “ungeheuer viel.” (DB, S. 21) Und Bemerkungen wie diese sind zusammen mit dem oben zitierten Brief an Malcolm sowie der von Rhees überlieferten Tatsache, daß er sich eine Zeitlang gar als einen “‘Schüler [...]’ und ‘Anhänger Freuds’ (VG, S. 61) bezeichnete, dafür verantwortlich, daß uns Wittgensteins Verhältnis zu Freud heute eben doch nicht so eindeutig als negativ und ablehnend, sondern – wie eingangs betont – vielmehr als ambivalent erscheint. Anschlußfähig, ja geradezu exemplarisch erscheint Wittgenstein die Psychoanalyse nämlich hinsichtlich ihres behandlungstechnischen Grundgedankens, der – als “der eigentliche Same der Psychoanalyse”, aus dem sich alles Übrige entwickelte – “von Breuer, nicht von Freud, herrührt” (VB, S. 500 f.), wie Wittgenstein richtig vermutete.

Freud war durchaus bereit, dies zuzugeben. Die bahnbrechende “Entdeckung von Breuer, [...] in welcher er” – wie Freud in seinen *Vorlesungen zur Einführung in die Psychoanalyse* unumwunden einräumte – “keinen Genossen hat”¹⁴, betraf den Charakter der von Freud und Breuer am Beispiel der Hysterie untersuchten neurotischen Symptome, und diese Entdeckung ließ es sinnvoll erscheinen, das Konzept eines psychisch Unbewußten erstmals in eine Theorie der menschlichen Psyche einzuführen. Breuer entdeckte dabei eigentlich zweierlei. Erstens erkannte er, man könne “folgendes behaupten: Jedesmal, wenn wir auf ein Symptom stoßen, dürfen wir schließen, es bestehen bei dem Kranken bestimmte unbewußte Vorgänge, die eben den Sinn des Symptoms enthalten.”¹⁵ Neurotische Symptome lassen sich, so lehrte Breuers Einsicht, generell als “Abkömmlinge”¹⁶ unbewältigter, in der Regel verdrängter Traumatisierungen, Konflikte oder Triebansprüche deuten, wobei es “erforderlich” ist, “daß dieser Sinn” der Symptome (im Sinne ihres durch das je Unbewältigte Motiviert-Seins)

“unbewußt sei, damit das Symptom zustande komme. Aus bewußten Vorgängen werden Symptome nicht gebildet.”¹⁷ Und zweitens erkannte er im Rahmen seiner therapeutischen Praxis: “sowie die betreffenden unbewußten” Vorgänge “bewußt geworden sind, muß das Symptom verschwinden.”¹⁸ Zusammengenommen eröffneten diese beiden Einsichten “einen Zugang zur Therapie, einen Weg, Symptome zum Verschwinden zu bringen. [...] Der Breuersche Fund” blieb fortan “die Grundlage der psychoanalytischen Therapie”, wie sie dann insbesondere Freud fortentwickelte: “Unsere Therapie”, sagte er in seinen *Vorlesungen* “wirkt dadurch, daß sie Unbewußtes in Bewußtes verwandelt, und wirkt nur, insoweit sie in die Lage kommt, diese Verwandlung durchzusetzen.”¹⁹

Diesen Gedanken, den Samen aller späteren Psychoanalyse, hat Wittgenstein positiv aufgenommen. Wenn es um *diese* behandlingstechnische Grundidee einer psychoanalytischen Therapie ging, war er sogar bereit, Freuds Begriff des Unbewußten, den er – wie wir gesehen haben – in anderem Zusammenhang scharf kritisierte, in seine eigenen Überlegungen aufzunehmen. Tatsächlich spricht einiges sogar dafür, daß die therapeutische Grundidee der Psychoanalyse für Wittgensteins Verständnis von philosophischer Methode, für seine Vorstellung von Philosophie als einer Form von Therapie (vgl. PU 133) begrifflicher Verwirrung, wie er sie seit 1929 in der mittleren und späten Periode seines Denkens entwickelte, Pate gestanden hat. Denn Wittgenstein, der ja bereits seit 1919 mit Freuds *Œuvre* vertraut war, betont, daß die unverkennbare “Analogie” zwischen dem psychoanalytischen Therapiekonzept und seiner eigenen Methode “kein Zufall” (D 302, S. 28) sei. So, wie der Psychoanalytiker neurotische Symptome durch Aufdeckung und Bewußtmachung der zugrundeliegenden Verdrängungen zu beseitigen versucht, genau so versucht nämlich die philosophische Therapie Wittgensteins, philosophische Probleme, die dem Denken “einen ständigen Kampf und Beunruhigung”, ja geradezu eine “Qual”²⁰ bereiten und an denen es nicht weniger leidet als der Neurotiker an seinen Symptomen, dadurch aufzulösen, daß sie die unbewußt wirksamen “falsche[n] Analogien” (BT, S. 409) bewußt macht, auf denen die Probleme und die damit verbundenen philosophischen Thesen beruhen. Die “Verstrickung” des Denkens in “falsche Analogien”, die uns auf Grund von oberflächlichen Ähnlichkeiten in der Grammatik von sprachlichen Ausdrücken irrtümlicherweise annehmen lassen, daß sie auch auf ähnliche Weise Gegenstände oder Vorgänge bezeichnen, macht ja nach Wittgensteins Überzeugung in der mittleren und späten Periode den eigentlichen “*morbus philosophicus*”

(MS 110, S. 86 f.) aus. Denn wenn wir uns z.B., verstrickt in eine solche falsche Analogie, unbewußt von der Vorstellung leiten lassen, Verben wie ‘denken’, ‘wissen’ oder ‘meinen’ bezeichneten auf ähnliche Weise Vorgänge wie die Tätigkeitswörter ‘reisen’, ‘laufen’ oder ‘bauen’, dann werden wir versucht sein zu sagen, erstere bezeichneten ‘innere’ Vorgänge auf ähnlich Weise, wie zweiteere äußere. Doch *dies* so zu sehen und von einer solchen Sicht immer wieder beunruhigt zu sein, weil wir solche seltsamen ‘innere’ Vorgänge mit unserem üblichen psychologischen Vokabular kaum zu fassen vermögen, *dies* ist die Krankheit, von der Wittgenstein das philosophische Denken durch Bewußtmachung der dem philosophisch Verwirrten unbewußten falschen Analogie kurieren möchte.

Daß seine philosophische Kur dabei mehr als äußerliche Ähnlichkeiten mit der psychoanalytischen aufweist, hat Wittgenstein selbst zuerst in einer Bemerkung von Oktober 1930 hervorgehoben. Es sei “eine Haupttätigkeit der Philosophie”, notiert er hier,

“vor falschen Vergleichen zu warnen. Vor (den) falschen [Vergleichen| Gleichnissen] zu warnen die unserer Ausdrucksweise – ohne daß wir uns dessen ganz bewußt sind – zu Grunde liegen. Ich glaube unsere Methode ähnelt hier der der Psychoanalyse die auch Unbewußtes bewußt und dadurch unschädlich machen will und ich glaube daß diese Ähnlichkeit keine rein äußerliche ist.” (MS 109, S. 174)

Was Wittgenstein hier selbst konstatiert, ist natürlich auch von einigen seiner Interpreten gelegentlich bemerkt und wenigstens beiläufig angesprochen worden.²¹ Doch erst Gordon Baker hat in zwei späten Aufsätzen nachdrücklich geltend gemacht, daß ein enger Vergleich mit Freuds Methode mindestens für einige Jahre eine Quelle für Wittgensteins eigene Methodenkonzeption darstellte: für den Zeitraum zwischen dem Beginn der Zusammenstellung des *Big Typescripts* (TS 213) um 1930 und der Niederschrift von TS 220, einer sog. Frühfassung der *Philosophischen Untersuchungen* von 1937 oder 1938²². Denn im Februar 1938 findet man in Wittgensteins Nachlaß letztmalig eine ausdrückliche Bemerkung: “What we do is much more akin to psychoanalysis than you might be aware of” (MS 158, S. 34). Doch an anderer Stelle deutet Baker darüber hinausgehend an, man könne vielleicht sogar sagen, Wittgensteins am Vorbild Freuds orientierte Konzeption von Philosophie durchziehe und eine sein gesamtes späteres

Philosophieren²³. Und sofern er mit dieser zweiten Behauptung Recht hat, wirft dies neue Fragen nach Wittgensteins Philosophieverständnis in den späteren Fassungen der *Philosophischen Untersuchungen* nach 1938 auf, die ich am Schluß meiner Überlegungen wenigstens ansprechen möchte.

Zunächst ist allerdings zuzugeben, daß sich explizite Bezugnahmen auf Analogien zwischen der Psychoanalyse und Wittgensteins Konzept einer philosophischen Therapie im Nachlaß nur zwischen 1930 und 1938 finden. In diesen Jahren geht er so weit, das, was er philosophisch tut, in einer Klammerbemerkung sogar einmal als “Psychoanalyse der grammatischen Mißdeutungen” (MS 145, S. 58) zu bezeichnen. Die deutlichsten Bemerkungen zu solchen Analogien finden sich dabei im sog. *Diktat für Schlick* von (höchst wahrscheinlich) 1932, das Friedrich Waismann niederschrieb, sowie in einem *Philosophie* betitelten Hauptabschnitt des *Big Typescripts* (BT, S. 406 – S. 435). Im *Diktat für Schlick* heißt es ähnlich wie an der zitierten Stelle aus MS 109:

“(Unsere Methode ähnelt in gewissem Sinn der Psychoanalyse. In ihrer Ausdrucksweise könnte man sagen, das im Unbewußten wirkende Gleichnis wird unschädlich, wenn es ausgesprochen wird. [Und dieser Vergleich mit der Analyse läßt sich noch weiterhin fortsetzen.]) Und diese Analogie ist gewiß kein Zufall.)” (D 302, S. 28)

Auch hier wird die Analogie zwischen Psychoanalyse und philosophischer Methode à la Wittgenstein darin gesehen, daß unbewußt wirksame Gleichnisse aufgedeckt und ausgesprochen und philosophische Probleme eben durch solche Bewußtmachung zum Verschwinden gebracht würden, wie neurotische Symptome durch ein gleichartiges psychoanalytisches Vorgehen. Es wird zudem gesagt, daß – wie eben schon einmal erwähnt – die betonte Analogie kein Zufall sei, was wohl nur heißen kann, daß Freuds behandlingstechnischer Grundgedanke Wittgensteins Methodenverständnis inspirierte. Und schließlich wird ausdrücklich betont, daß sich der Vergleich beider Methoden keineswegs auf die eine gemeinsame Grundidee reduziere, sondern sich noch *weithin* fortsetzen lasse.

Doch worin bestehen weitere Analogien zwischen beiden Therapieansätzen zumindest während der dreißiger Jahre? Wittgenstein führt sie nicht ausdrücklich an, doch derjenige, der sowohl mit seinen als auch mit Freuds

Schriften vertraut ist, wird rasch weitere Parallelen finden. Eine zweite, die man nach der Bewußtmachung von Unbewußtem anführen kann, ist sicher darin zu sehen, daß es beiden Ansätzen nicht so sehr um Theoriebildung geht; weder um eine adäquate Theorie des Unbewußten bei Freud noch um eine Theorie der Sprache oder der Bedeutung bei Wittgenstein.²⁴ “Ziel der Behandlung” ist für Freud “die praktische Genesung des Kranken”, d.h. das Verschwinden der Symptome und damit die “Herstellung seiner Leistungs- und Genußfähigkeit”²⁵, die durch die akute Neurose eingeschränkt war. Gleichmaßen zielt auch Wittgenstein spätestens seit dem *Big Typescript* statt auf Theoriebildung auf Auflösung, Zersetzung der aus unbewußten falschen Analogien stammenden Probleme und Beunruhigungen. “Wie ich Philosophie betreibe”, notiert er in diesem Sinne,

“ist es ihre ganze Aufgabe, den Ausdruck so zu gestalten, daß gewisse Beunruhigungen/Probleme/ verschwinden.

[...]

Die Probleme werden im eigentlichen Sinne aufgelöst – wie ein Stück Zucker im Wasser.” (BT, S. 421)

Wohlgemerkt: Das ist philosophisch, wie Wittgenstein sagt, ‘die ganze Aufgabe’ und keineswegs noch irgendetwas darüber hinaus! Es geht darum, “die Philosophie zur Ruhe” zu bringen, “so daß sie nicht mehr von Fragen gepeitscht” (BT, S. 431) wird, und wenn dies einer philosophischen Therapie gelungen ist, kann es zu “Friede in den Gedanken” kommen, dem “ersehnte[n] Ziel dessen, der philosophiert” (VB, S. 511), wie es in einer späteren Bemerkung von 1944 einmal pointiert heißt.

Sowohl Psychoanalyse als auch Wittgensteinsche Therapie setzen zur Erreichung dieses Zieles – drittens – die Mitarbeit, mindestens die Fähigkeit zur Mitarbeit des Patienten voraus.²⁶ Für Wittgenstein ist dies so, weil man niemanden zur Einsicht in sein Denken formierende falsche Analogien nötigen kann; sowenig, wie der Psychoanalytiker jemanden zum Zugeständnis einer Verdrängung zwingen kann. Vielmehr muß ein jeder die Einsicht selbst von sich aus vollziehen, weshalb Wittgenstein im *Big Typescript* schreibt, daß die “Arbeit an der Philosophie [...] eigentlich mehr” als Arbeit an sachlichen Fragen für jeden Denkenden eine “Arbeit an Einem selbst” sei. “An der eignen Auffassung. Daran, wie man die Dinge sieht.” (BT, S. 407)²⁷ Wer zu dieser Arbeit an sich selbst nicht fähig oder nicht willens ist, den kann Wittgenstein auch nicht aus seiner begrifflichen Verwirrung, aus

jenem Geflecht von irreleitenden falschen Analogien herausreißen. Denn “das Herausreißen” funktioniert im Zuge einer philosophischen Therapie

“nur bei denen, die in einer instinktiven Auflehnung gegen die / Unbefriedigung mit der/ Sprache leben. Nicht bei denen, die ihrem ganzen Instinkt nach in *der* Herde leben, die diese Sprache als ihren eigentlichen Ausdruck geschaffen hat.” (BT, S. 423)

Auch hinsichtlich der Mittel, die man in der Philosophie und in der Psychoanalyse benutzt, um jemanden, der an philosophischen Problemen oder an neurotischen Symptomen leidet, von seinem Leiden zu befreien, gibt es zwischen beiden Tätigkeitsbereichen eine – vierte – Parallele. Beide machen ihren Patienten im philosophischen bzw. therapeutischen Gespräch Deutungsangebote, die bestimmte falsche Analogien aufdecken, in denen sich der begrifflich Verwirrte verstrickt, oder die dem Neurotiker die von ihm verdrängten psychischen Konflikte verständlich machen. Und dabei besteht die Parallele zwischen Philosophie und “Psychoanalyse” in diesem Falle darin, “daß das Resultat der Analyse”, das sich in beiden Tätigkeitsbereichen in den jeweiligen Deutungsangeboten ausspricht, “die Anerkennung des Analysierten verlangt” (MS 156a, S. 56; vgl. BT, S. 410). Denn unabhängig von der Akzeptanz auf seiten des Patienten gibt es hier wie dort keine unabhängigen Kriterien für die Richtigkeit der vorgelegten Deutungen. “Wir können ja”, heißt es in diesem Sinne im *Big Typescript*, “nur dann den Andern eines Fehlers” in Gedanken oder einer Probleme stiftenden Sichtweise “überführen, wenn er anerkennt, daß dies”, was ihm als Deutung angeboten wird, “wirklich der Ausdruck seines Gefühls ist. [...] Nämlich, nur wenn er ihn als solchen anerkennt, *ist* er der richtige Ausdruck” (ebd.). Denn nur, wenn er zur angebotenen Deutung von sich aus etwas sagt wie: Ja, tatsächlich! Das, was man mit Worten wie ‘denken’, ‘wissen’ oder ‘meinen’ meint, habe ich mir immer als innere Vorgänge vorgestellt, weil Wörter wie ‘reisen’, ‘laufen’ oder ‘bauen’ äußere Vorgänge bezeichnen. Doch die Analogie ist falsch!, nur *dann* kann die Deutung als richtig und problemlösend gelten. “Was der Andere” mit einer solchen oder einer vergleichbaren Äußerung dann “anerkennt,”, schreibt Wittgenstein, “ist die Analogie die ich ihm darbiere, als Quelle seines Gedankens.” (ebd.) Und nur dann werden – möglicherweise – auch das philosophische Problem oder das neurotische Symptom verschwinden.

Weil es – nochmals gesagt – keine unabhängigen Kriterien für zum Therapieerfolg führende Deutungen gibt, sind die Gesprächsstrategien, die philosophisch und psychoanalytisch bei dem Versuch verwendet werden, jemanden zu einer Veränderung seiner Sichtweise zu bringen, eher als Formen der Überredung, denn der argumentativen Überzeugung zu bezeichnen. Was der Psychoanalytiker oftmals vornimmt, ist – wie Freud durchaus zugibt – Beeinflussung, Suggestion.²⁸ Und über die Qualität der jeweiligen Beeinflussung läßt sich durchaus streiten. Wenn Wittgenstein in einer Bemerkung von Februar 1938 über die “psychoanalytische Behandlung” schreibt, sie komme “wahrscheinlich meistens einer grauenhaft schlechten Beeinflussung gleich” (MS 158, S. 24), dann zeigt dies, daß er von den diesbezüglichen Überredungsstrategien, von denen er bei Freud las oder von denen er durch Gespräche über die Analyse seiner Schwester Margarethe erfuhr, nicht sonderlich viel gehalten hat. Doch prinzipiell besteht in dieser Hinsicht eine weitere – fünfte – Analogie zwischen philosophischer Therapie und Psychoanalyse. Denn, so soll Wittgenstein in einer Vorlesung desselben Jahres gesagt haben, was “ich tue, ist auch Überredung” (VG, S. 44) im Dienste des Versuchs, “den Stil des Denkens” derer “zu ändern” (VG, S. 45), die sich von falschen Analogien blenden lassen.

Wenn es stimmt, daß sich der Vergleich zwischen seiner philosophischen Methode und der Psychoanalyse ‘weithin fortsetzen’ lasse, wie Wittgenstein im *Diktat für Schlick* betonte, ist nicht auszuschließen, daß sich vielleicht noch zahlreiche weitere Parallelen und Ähnlichkeiten herausarbeiten lassen. Ich möchte hier nur noch auf eine weitere Parallele hinweisen, die auch von Gordon Baker nicht zureichend beachtet wurde, die mir freilich für ein angemessenes Verständnis von Wittgensteins philosophischer Methode wichtig zu sein scheint. Diese Parallele besteht darin, daß sowohl in einer Philosophie im Sinne Wittgensteins als auch in der Psychoanalyse – wohl verstanden – eigentlich nicht die Bewußtmachung unbewußt wirksamer Gleichnisse oder ins Nichtwissen verdrängter Konflikte und Triebansprüche als solche das Entscheidende ist, sondern vielmehr die Arbeit an der Überwindung der *Widerstände*, die der Bewußtmachung des Verdrängten auf seiten des philosophisch Verwirrten oder des Neurotikers entgegenstehen.

Im Prozeß einer psychoanalytischen Behandlung ist dies so, weil – wie Freud schreibt – natürlich nicht “dies Nichtwissen” um das Verdrängte “an sich [...] das pathogene Moment” ist, sonst müßte ja – was zu behaupten absurd wäre – Nichtwissen als solches krank machen; “sondern” vielmehr

“die Begründung des Nichtwissens in *inneren Widerständen*, welche das Nichtwissen zuerst hervorgerufen haben und es jetzt noch unterhalten.”²⁹ Als “Widerstände” – das ist bekannt – werden in der Terminologie der Psychoanalyse “alle Kräfte” bezeichnet, “die sich der Genesungsarbeit” auf seiten des Patienten “widersetzen”³⁰ und bestehende Verdrängungen aufrecht zu erhalten versuchen. Sie treten im Zuge einer psychoanalytischen Kur dann auf, wenn das analytische Gespräch oder ein Deutungsangebot des Analytikers den verdrängten Krankheitsursachen nahekomen, und sie äußern sich als der Bewußtmachung entgegenwirkende Kräfte in unterschiedlichster Art und Weise: Z. B. in den Behauptungen des Patienten, zum Thema ‘plötzlich’ keine Einfälle mehr zu haben oder an der Fortsetzung der Behandlung als Ganzer ‘auf einmal’ nicht mehr interessiert zu sein. Äußern können sich diese Widerstandskräfte aber beispielsweise auch in vielfältigen Formen der Weigerung, Deutungen zu akzeptieren, oder in denjenigen Arten der Übertragung, in denen der Patient oder die Patientin – etwa in der sog. Übertragungsliebe³¹ – vom Kern des Problems abzulenken versuchen. “Der Kampf gegen alle diese Widerstände”, betont Freud, “ist unsere Hauptarbeit während der analytischen Kur”.³²

Weil diese Kräfte zur Aufrechterhaltung bestehender Verdrängungen nach Freuds Erfahrung freilich sehr stark sind, reicht zu ihrer Überwindung die bloße Bewußtmachung des Verdrängten in Form einer unmittelbaren Konfrontation des Patienten mit einer Deutung des Psychoanalytikers nicht hin, um das jeweilige neurotische Symptom zum Verschwinden zu bringen. Selbst wenn der Analytiker die ins Unbewußte verdrängten Probleme des Neurotikers in der ersten Sitzung einer psychoanalytischen Kur erraten und ihm seine Deutung zwecks Verkürzung des Therapieprozesses vor Augen stellen würde, würde dies darum zu keiner Linderung der Symptome führen. Denn wie Freud schreibt, dürfte eine solche Vorgehensweise gewöhnlich “ebensoviel Einfluß auf die nervösen Leidenssymptome” haben “wie die Verteilung von Menükarten zur Zeit einer Hungersnot auf den Hunger”³³: nämlich gar keinen! Im Gegenteil; tatsächlich ist zu befürchten, daß ein derartiges Vorgehen, das nach Freud einen “schweren” behandlungstechnischen “Fehler”³⁴ darstellt, die Widerstände des Patienten noch verstärken wird. Deshalb sind im Zuge der psychoanalytischen Behandlung zunächst die Widerstände des Patienten zu überwinden, so daß er sich von sich aus, mit der Zeit der eigenen Arbeit an der richtigen Sicht der Dinge, seiner Verdrängungen bewußt zu werden vermag. Erst dann kann Breuers ursprüngliche Einsicht greifen.

Für Wittgensteins Projekt, philosophische Beunruhigungen zu beseitigen, stellt sich die Situation ganz ähnlich dar. Denn wie er sieht, hilft es auch in der Philosophie nichts, den philosophisch Verwirrten unmittelbar mit einer falschen Analogie zu konfrontieren und z.B. dem, der das, was Verben wie ‘denken’, ‘wissen’ oder ‘meinen’ bezeichnen, als ‘innere Vorgänge’ verstehen *will*, ins Gesicht zu sagen, daß er sich auf irreführende Weise an Wörtern für äußere Vorgänge orientiere. Denjenigen, der ‘denken’, ‘wissen’ oder ‘meinen’ für innere Vorgänge hält, wird dies kaum beeindrucken. Auch in der Philosophie gilt es deshalb zunächst, “Widerstände [...] zu überwinden”, die einer “Umstellung” (BT, S. 406) der Sichtweise eines begrifflich Verwirrten entgegenstehen³⁵, wie Wittgenstein an sich selbst erfahren hatte. Denn das Phänomen des Widerstandes hatte er im September 1929 an seinem eigenen philosophischen Schreiben als wirksam erlebt: “In mir”, so notierte er damals, “sträubt sich ein Freudscher Widerstand gegen das Finden der Wahrheit”, und er erkannte dessen Wirkung darin, daß er gerade mit Sätzen, die in Richtung Wahrheit wiesen, subjektiv höchst unzufrieden war: “wenn ich einen Satz ungern hinschreibe”, notierte er im Zusammenhang seiner diesbezüglichen Selbstbeobachtung,

“mit der Empfindung, daß er dumm oder mir zuwider ist, so ist das meistens gerade der Satz, der einen wichtigen Beitrag in der Richtung der Wahrheit enthält. Wenn ich mich quasi geniere etwas niederzuschreiben so ist es meist etwas sehr Wichtiges.”
(MS 107, S. 100)

Und diese Erfahrung mit der eigenen philosophischen Schriftstellerei brachte ihn, wie man vermuten darf, dann im *Big Typescript* dazu, generell davon zu sprechen, daß dem Finden der Wahrheit philosophisch oftmals Widerstände entgegenstehen, die er nun – damit allerdings vom Vorbild Freuds abweichend – als “Widerstände des *Willens*” (BT, S. 406) bezeichnete. Denn er dachte, daß sie sich in der Philosophie auf eine Diskrepanz zwischen einem “Verstehen” der Welt, das an sich ‘in Richtung Wahrheit’ möglich sei, und “dem, was die meisten Menschen” im Lichte ihrer Sprache und ihrer Denkgewohnheiten “sehen *wollen*” (BT, S. 406 f.), zurückführen lassen; eine Diskrepanz, von der bei Freud nicht die Rede ist. Doch trotz der von Freud abweichenden Begründung für die Virulenz philosophischer Widerstände bleibt Wittgenstein ganz auf Freudschen Pfaden, wenn er

meint, daß die Überwindung von Widerständen die eigentliche “Schwierigkeit der Philosophie” (BT, S. 406) ausmache.

Wie sind solche Widerstände aber nun konkret zu überwinden, etwa im Gespräch mit einem – jedenfalls in Wittgensteins Sicht – philosophisch Verwirrten, der einen Satz wie z.B. “das Nichts nichtet” (D 302, S. 28) für eine sinnvolle Aussage hält? Wie wir gesehen haben, hat es offenbar *gar keinen* Sinn, ihn unmittelbar mit der These zu konfrontieren, daß sein Satz – gemessen am Gebrauch einer natürlichen Sprache im Alltag – Unsinn sei. Das mag zwar wahr sein, doch wird diese These, so unmittelbar behauptet, seine Widerstände wohl eher verstärken. Denn für ihn ist dieser Satz ja keineswegs Unsinn, sondern artikuliert eine tiefe – sagen wir: metaphysische – Einsicht. Damit jemand solche metaphysischen Sätze aufgibt, muß man ihm vielmehr die in solchen Sätzen unbewußt wirksamen Gleichnisse oder falschen Analogien vor Augen führen und – wie es im *Big Typescript* heißt – die “Physiognomie jedes Irrtums nachzeichnen” (BT, S. 410), so daß der begrifflich Verwirrte das falsche Gleichnis erkennen und als Quelle seines Gedankens anerkennen kann. Dann wird er seine Widerstände *vielleicht* aufgeben. Wie Wittgenstein insbesondere im *Diktat für Schlick* ausführt, in dem er die Analogie von Psychoanalyse und Philosophie am stärksten betont hat, muß man angesichts eines Satzes wie ‘das Nichts nichtet’, “um ihm gerecht zu werden”, deshalb zunächst fragen: “was hat dem Autor bei diesem Satz vorgeschwebt? Woher hat er diesen Satz genommen?” (D 302, S. 28) Und dann wird man vielleicht zu der Antwort gelangen:

“Wer etwa von Gegensatz des Seins und des Nichts spricht und vom Nichts als etwas gegenüber der Verneinung Primärem, der denkt, glaube ich, etwa an eine Insel des Seins umspült vom unendlichen Meer des Nichts. Was wir in dieses Meer werfen, wird in seinem Wasser aufgelöst, vernichtet. Es selbst aber hat auch eine unendliche Tätigkeit, vergleichbar den Wogen des Meeres, es existiert, es ist, und wir sagen: ‘es nichtet’.” (ebd.)

Doch welche Erklärung man aber auch immer für die manierierte Rede-weise ‘das Nichts nichtet’ findet: Derjenige, der einen solchen Satz gebraucht, muß keineswegs zugestehen, daß seiner Ausdrucksweise ein solches Bild, wie Wittgenstein sagt: ein solches Gleichnis zugrunde lag. Denn wie “kann man jemandem zeigen, daß dieses Gleichnis nun das richtige ist?” (ebd.) Wie kann man jemandem zeigen, daß er sich tatsächlich von

diesem Bild leiten ließ? “Man kann es gar nicht zeigen.” (ebd.) Und so bleibt nach Wittgenstein nicht anderes übrig, als weiterhin gegen die Widerstände des metaphysisch Verwirrten anzuarbeiten und zu versuchen, seine Sichtweise umzustellen. Gemäß seiner Darstellung im *Diktat für Schlick* geschieht dies primär durch Fragen, die den Metaphysiker dazu bringen sollen, *sich selbst* über seine Ausdruckweise Rechenschaft zu geben:

“Wenn jemand sagt ‘das Nichts nichtet’ so können wir ihm in der Art unserer Betrachtungsweise sagen: Gut, was sollen wir nun mit diesem Satz anfangen? Das heißt, was folgt aus ihm und woraus folgt er? Aus welcher Erfahrung können wir ihn feststellen? Oder aus gar keiner? Was ist seine Funktion? Ist er ein Satz der Wissenschaft? Und welche Stellung nimmt er im Haus der Wissenschaft ein? Die eines Grundsteins, auf welchem andere Bausteine liegen? Oder etwa die eines Arguments?” (D 302, S. 29)

Und so weiter. Bei all diesen Fragen kommt es Wittgenstein *vor allem* auf ihre Widerstände zersetzende Wirkung an, und nicht so sehr auf die Antworten im einzelnen. Denn, so fährt er fort: “Ich erkläre mich mit allem einverstanden” (ebd.), wie auch immer die Antwort lauten sollte. “Ich habe nichts dagegen, daß du an der Maschine der Sprache ein leerlaufendes Rad anbringst,” sagt er zu seinem metaphysikaffinen Gesprächspartner, “aber ich wünsche zu wissen, ob es leer läuft oder in welche andere Räder es eingreift.” (ebd.) Orientiert an der Antwort kann man dann entscheiden, wie und in welche Richtung die philosophische Therapie fortgesetzt werden kann.

Ich breche die Andeutungen zur Frage, wie sich Wittgenstein eine psychoanalyseanaloge Vorgehensweise in der Philosophie wohl im einzelnen vorgestellt haben mag, hier ab. Denn es ist nicht klar, für welche Schriften welchen Zeitraumes er selbst die Parallelen zwischen Sprach- und Psychoanalyse behauptet hätte. Kann man z.B. von jenem Projekt, das sich seit November 1936 unter dem Titel *Philosophische Untersuchungen* herausgebildet hat, sagen, daß die philosophische Analysetätigkeit hier als psychoanalyseanalog gesehen werde? Antworten auf diese Frage sind schwierig und – gleichgültig wie sie ausfallen – stets spekulativ. Faktum ist – wie oben bereits erwähnt –, daß Wittgenstein in Schriften nach 1938 von entsprechenden Analogien nicht mehr gesprochen hat. Tatsächlich zeichnen

sich die späteren Fassungen der *Philosophischen Untersuchungen* nicht zuletzt dadurch aus, daß Wittgenstein allgemeine methodologische Reflexionen, wie wir sie in der ersten Hälfte der dreißiger Jahre vielfach finden, mehr und mehr ausdünn, so daß sein Verständnis von Philosophie für einen Leser, der nur die spätesten Texte kennt, undeutlich bleibt. Doch mindestens an einer Stelle der Spätfassung seiner Untersuchungen heißt es noch: “Der Philosoph behandelt eine Frage; wie eine Krankheit.” (PU 255) Und daß die Analogie zwischen der philosophischen Tätigkeit und der ärztlichen Behandlung einer Krankheit, die Wittgenstein an dieser Stelle im Auge hat, nun plötzlich eine Analogie zur Tätigkeit des Chirurgen sein soll, der ein philosophisches Problem wegschneidet wie ein Krebsgeschwür, scheint mir ziemlich unwahrscheinlich. Manches spricht im Gegenteil dafür, daß der behandelnde Arzt auch hier immer noch der Psychoanalytiker ist. Doch ein entsprechender Nachweis wäre anhand von Wittgensteins späten Schriften zu führen.

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Endnoten

1. Die vorliegenden Überlegungen haben von einem Forschungsaufenthalt profitiert, den der Verfasser im März 2007 am Wittgenstein-Archiv der Universität Bergen, Norwegen, verbringen konnte. Dem Wittgenstein-Archiv, insbesondere seinem Leiter, Herrn Dr. Alois Pichler, sei an dieser Stelle herzlich für den dort gebotenen Zugang zur elektronischen Version von Wittgensteins Nachlaß gedankt. Einige Teile von Wittgensteins Nachlaß werden im folgenden nach der *Bergen Electronic Edition* mit Manuskript- bzw. Typoskriptnummer und Seitenzahl im Text zitiert.
2. Siehe Bouveresse, S. 4.
3. Siehe McGuinness, S. 27, sowie Bouveresse, Anm. 2.
4. Hier in der Formulierung: "Ein jeder Fortschritt ist immer nur halb so groß, als er zuerst ausschaut!" Vgl. Sigmund Freud, "Die Frage der Laienanalyse. Unterredungen mit einem Unparteiischen" (1926) sowie "Die endliche und die unendliche Analyse" (1937), beides in: ders., *Studienausgabe*, Ergänzungsband, S. 285 und S. 369.
5. Vgl. Bouveresse, Anm. 2, S. 14 und S. 20.
6. Vgl. dazu u.a. Bouveresse, Anm. 2, S. 22 ff., Hans Rudi Fischer, S. 122 f., sowie Kroß, S. 86.
7. Freud, Laienanalyse, Anm. 4, S. 305.
8. Dieser Aspekt von Wittgensteins Freud-Kritik wurde insbesondere von Bouveresse, Anm. 2, S. 69 ff., Cioffi, S. 206 ff., sowie Fischer, Anm. 6, S. 110 ff., betont.
9. Entsprechende Belegstellen im Œuvre Freuds hat Fischer, Anm. 6, S. 111 ff., zusammengetragen.
10. Siehe dazu Fischer, Anm. 6, S. 122 f.
11. Sigmund Freud, "Das Unbewußte" (1915), in: *Studienausgabe*, Bd. III, S. 127.
12. Vgl. dazu Bouveresse, Anm. 2, S. 33.
13. Freud, Laienanalyse, Anm. 4, S. 302.
14. Sigmund Freud, "Vorlesungen zur Einführung in die Psychoanalyse. Und Neue Folge" (1916/17, 1933), in: *Studienausgabe*, Bd. 1, S. 278.
15. Ebd.
16. Ebd.
17. Ebd.

18. Ebd.
19. Ebd., S. 279.
20. TS 213, S. 409 und S. 416. TS 213 von 1933, heute allgemein bekannt als das *Big Typescript*, wird im folgenden mit der Chiffre BT im Text zitiert.
21. Vgl. z.B. Bouveresse, Anm. 2, S. 8-11; Kurt R. Fischer, S. 95; Hrachovec, S. 85 f.; sowie Kroß, Anm. 6, S. 87-89.
22. Nach Gordon Baker "there was a definite phase of Wittgenstein's thinking in which a close comparison with Freud's methods informed his own conception of philosophical investigation. This phase extended over several years, at least from the composition of BT [= TS 213, *The Big Typescript*, S.M.] to the writing of PPI" [= TS 220, S.M.]. Gordon Baker, "'Our' Method of Thinking about 'Thinking'", in: *Wittgenstein's Method*, S. 155.
23. Vgl. Gordon Baker, "Wittgenstein's Method and Psychoanalysis", in: *Wittgenstein's Method*, Anm. 22, S. 219.
24. Siehe dazu auch Eugen Fischer 2006.
25. Sigmund Freud, "Die Freudsche psychoanalytische Methode", in: *Studienausgabe*, Ergänzungsband, S. 105.
26. Vgl. Freud, Methode, Anm. 25, S. 106.
27. Siehe dazu eingehender Vf., "Philosophie als Arbeit an sich selbst. Wittgenstein, Nietzsche und Paul Ernst", in: Majetschak (Hrsg.) 2006.
28. Vgl. Freud, "Zur Dynamik der Übertragung", in: *Studienausgabe*, Ergänzungsband, S. 165.
29. Freud, "Über 'wilde' Psychoanalyse", in: *Studienausgabe*, Ergänzungsband, S. 139.
30. Freud, Laienanalyse, Anm. 4, S. 314.
31. Vgl. Freud, "Bemerkungen über die Übertragungsliebe", in: *Studienausgabe*, Ergänzungsband, S. 217 ff.
32. Freud, Laienanalyse, Anm. 4, S. 315.
33. Freud, Über 'wilde' Psychoanalyse, Anm. 29, S. 139.
34. Freud, Laienanalyse, Anm. 4, S. 311.
35. Daß Wittgenstein tatsächlich psychoanalytisches Vokabular verwendet, wenn er in diesem Zusammenhang von "Widerständen" spricht, hatte zu Recht auch schon Gordon Baker betont. Siehe Baker, 'Our' Method, Anm. 22, S. 160.

Verdächtige Bilder und Töne: Wittgenstein 1946–1951

KATALIN NEUMER, BUDAPEST

Einleitung¹

Nach einer der gängigen Positionen der heutigen Wittgenstein-Forschung hat Wittgenstein die Bedeutsamkeit der Visualität erkannt und in seiner Argumentationsweise die Bilder eine gewichtige Rolle spielen lassen. Auf der anderen Seite wird auch allgemein behauptet, daß Wittgenstein der stimmhaften Seite der Sprache eine große Bedeutung zugeschrieben hat, woraus man u.a. auf seine Neigung zu den oralen Kulturen zu schließen pflegt.² Was das erstere betrifft, erscheint die Bildhaftigkeit schon in Wittgensteins expliziten Äußerungen janusköpfig. Diesen Zusammenhang werde ich auf der Grundlage textnaher Analysen von einigen Stellen aus Wittgensteins letzten Jahren weiter entwickeln, wobei ich ebenfalls eine Doppeldeutigkeit der Stimmhaftigkeit nachweisen möchte. Darüber hinaus werde ich zeigen, daß Bilder und Töne in manchen Kontexten – insbesondere im Kontext seiner Diskussion des Aspektsehens und -wechsels, des Bedeutungserlebnisses und der sekundären Bedeutung, d.h. im Zusammenhang mit für die Jahre 1946–1951 charakteristischen Begriffen – miteinander in (öfters synästhetische) Verbindung gesetzt werden und mit Wittgensteins eigenem Ausdruck “verdächtig” erscheinen. Dadurch werden Töne von ihrem Thron gestoßen und verwandeln sich in verführerischen Sirenenengesang.

1. Problemstellung

“Das falsche Bild verwirrt, das richtige Bild hilft.” (MS 173: 4r) Dieser Satz faßt das zweifache Anliegen des späten Wittgenstein zusammen, nämlich einerseits seine Warnung an die Leser davor, sich von falschen Analogien und Bildern zu Unsinn verführen zu lassen, andererseits aber sein Bestreben, an die Stelle der irreführenden Analogien und Bilder richtige zu

stellen, um dadurch auf die Dinge ein neues Licht zu werfen, bzw. seine Leser von der unsinnigen Sprechweise abzubringen. Zwischen den Bereichen von “richtig” und “falsch” befindet sich allerdings noch ein weniger evidentes Gebiet, und zwar eines von “verdächtigen” Bildern,³ welche uns ebenso gut auf den richtigen Weg führen wie auch irreführen können.

Bilder werden durch einen gemeinsamen Kontext auch öfters mit Tönen verknüpft. Darüber hinaus kommen Stimmhaftigkeit und Bildhaftigkeit mit den Begriffen von “Aspektsehen und -wechsel”, “Bedeutungserlebnis” und “sekundärer Bedeutung” verbunden vor – mit Begriffen also, deren Verknüpfung zu einem begrifflichen Netz sich als eine Wittgensteins letzten Jahren eigene Entwicklung betrachten läßt.⁴ Beide Verbindungen (i.e. sowohl die von Bildern und Tönen untereinander als auch ihre Verknüpfung mit Aspektsehen und -wechsel, Bedeutungserlebnis und sekundärer Bedeutung) erscheinen häufig janusköpfig oder aber “verdächtig” – die schillernde Zweideutigkeit der Bilder und Töne ergibt sich öfters eben aus diesen Verbindungen bzw. rühren von der ambivalenten Rolle der genannten Begriffe her.

Das ist hier leider nicht der Ort, an dem ich ausführlicher auf eine Darstellung von Aspektsehen und -wechsel, Bedeutungserlebnis und sekundärer Bedeutung eingehen kann (siehe die in Endnote 4 genannte Literatur). Soviel soll dennoch bemerkt werden, daß Wittgenstein in seiner Besprechung des Themas Aspektsehen und -wechsel oft auf Figuren, Illustrationen – auf verschiedene Formen der bildlichen Darstellung – hinweist. Mehrmals verwendet er sogar tatsächlich inmitten des geschriebenen Textes Bilder, die man einmal unter diesem, einmal unter jenem Aspekt sehen kann, wie auch in der folgenden Stelle:

Man könnte sich denken, daß an mehreren⁵ Stellen eines Buches, z.B. eines Lehrbuchs, die Illustration



stünde. Im dazugehörigen Text ist jedesmal von etwas anderem die Rede: Einmal von einem Glaswürfel, einmal von einer umgestülpten offenen Kiste, einmal von einem Drahtgestell, das diese Form hat, einmal von drei Brettern, die ein Raumeck bilden. Der Text deutet jedesmal die Illustration.

Aber wir können auch die Illustration einmal als das eine, ein-

mal als das andre Ding sehen. – Wir deuten sie also, und sehen sie, wie wir sie deuten. (MS 144: 38–39/PU–KGE 1024–1025; vgl. MS 130: 91–92, TS 244: 189, PU II 518–519)

Wittgenstein unterscheidet hier zwei Arten des Sehens und Verstehens eines Bildes: Im ersten Absatz sehen wir zwar dieselbe Figur, aber von verschiedenen Kontexten umgeben. Dabei *deutet* der jeweilige *Text* die Figur und *läßt uns* sie dadurch mal unter diesem, mal unter jenem Aspekt *sehen*. Im zweiten Absatz wird dieselbe Figur sozusagen kontextlos hingestellt. Infolgedessen können wir sie unter verschiedenen Aspekten betrachten: einmal als dies, einmal als das sehen, und somit einen Aspektwechsel erleben. Um die Figur zu verstehen, müssen *wir* sie zuerst *deuten*, um sie sodann der Deutung gemäß *sehen* zu können. Im ersten Falle geht es also unsererseits um ein pures Sehen, im zweiten sind aber sowohl Sehen als auch Deuten im Spiel. Im letzteren Fall haben wir also ein zweifaches Verhältnis zum Bild.

Bei der Behandlung von verschiedenen Aspekten desselben Bildes kommt Wittgenstein mehrmals auf das Thema der Erlebnisse, von denen ein sprachlicher Ausdruck “geladen” sein kann, zu sprechen: “Der Fall der ‘erlebten Bedeutung’ ist *verwandt* dem des Sehens einer Figur als dies, oder jenes.” (TS 229: 438; vgl. MS 135: 50, 85) Bedeutungserlebnisse und Aspekte haben in einem gemeinsamen Problemfeld ihren Platz: Sehen wir eine Figur verschiedenen Auffassungen gemäß (und eine Auffassung ist wiederum eine Deutung oder zumindest ein reflektives Verhältnis zum Gesehenen), dann entsprechen

diesen Auffassungen der Figur [...] Aspekte. — Hier haben wir die größte Ähnlichkeit {mit dem Bedeutungserlebnis. / mit dem Erleben der Bedeutung eines isolierten Worts. / mit dem Bedeutungserleben beim Aussprechen eines isolierten Worts.} (MS 136: 114a)

Dem ähnlich, wie eine Figur im zweiten Absatz unseres Zitats aus MS 144 kontextlos, i.e. isoliert erschienen ist (und die Isoliertheit hat es überhaupt ermöglicht, sie unter verschiedenen Aspekten zu betrachten), kommt nun ein Wort isoliert vor. Wie auch das Sehen eines Aspektwechsels ein Erlebnis dargestellt hat, kann auch das Aussprechen eines isolierten Worts mit Erlebnissen – Bedeutungserlebnissen – einhergehen. An diesem Punkt fügt sich die sekundäre Bedeutung in die Reihe. Eine sekundäre Bedeutung ist

nämlich laut Wittgenstein keine *andere* Bedeutung im Verhältnis zur primären: In Sätzen wie “Der Laut *a* ist rot” wird das Wort “rot” in keiner von den gewöhnlichen verschiedenen Bedeutungen benutzt, doch in einer anderen, sekundären Verwendung, in der sich ein neuer Aspekt zeigt, und die öfters mit Bedeutungserlebnissen einhergehen kann. Das Gesagte läßt wohl wieder eine Doppeldeutigkeit der genannten Begriffe einleuchten: einerseits hat jeder etwas mit Aspekt zu tun, den Wittgenstein einer Auffassung entsprechen ließ und auf Deutungen angewiesen darstellte, andererseits werden Erlebnisse immer wieder im Aspektsehen involviert.

Die genannten Begriffe sind also wenigstens janusköpfig, ambivalent einzustufen, und Wittgensteins Verhältnis zu ihnen ist dementsprechend ambivalent: Einerseits kann er das Moment der Deutung – die in seinen Augen das reibungslose Funktionieren der Sprachspiele stört – im Sehen eines Aspektwechsels nicht gutheißen. Die Möglichkeit, daß Wörter isoliert erscheinen bzw. Erlebnisse Sprechhandlungen begleiten können, stellt für ihn eine ähnliche Gefahr bzw. ein Phänomen dar, die das Funktionieren der Sprachspiele nicht wesentlich angehen. Um das Funktionieren der Sprachspiele begrifflich zu sichern, hat er daher in einer ersten Annäherung die erwähnten Begriffe bzw. Phänomene als von sekundärer Wichtigkeit eingestuft. Öfters konnte er aber dennoch nicht umhin, bei der Behandlung von Fragen, wie etwa, ob Leute, die nicht imstande wären, Aspektwechsel zu sehen, Bedeutungserlebnisse zu haben, Wörter in sekundärer Bedeutung zu benutzen – und die er “aspekt-” “gestalt-” oder “bedeutungsblind” genannt hat – diesen Fähigkeiten eine gewisse, manchmal sogar große Bedeutsamkeit zuzuschreiben. Wie etwa in den folgenden Überlegungen:

Denk Dir jemanden, der eine Zeichnung, oder Photographie ungerne sähe, weil er sagt, daß ein farbloser Mensch häßlich sei. Oder es könnte jemand finden, daß winzige Menschen, Häuser, etc., wie sie auf Bildern sind, unheimlich oder lächerlich, etc. seien. Dies wäre gewiß ein sehr seltsames Verhalten. [...]

Denk an unsere Reaktion gegen eine gute Photographie, gegen den Gesichtsausdruck der Photographie. Es könnte Menschen geben, die in einer Photographie höchstens eine Art von Diagramm sähen, wie wir etwa eine Landkarte betrachten; wir können daraus verschiedenes über die Landschaft entnehmen, aber nicht, z.B., die Landschaft beim Ansehen der Karte bewundern, oder ausrufen “Welche herrliche Aussicht!”

Der ‘Gestaltblinde’ muß abnorm in *dieser* Art sein. (TSS 229: 230, 245: 164–165; Manuskriptquelle: MS 130: 230–232)

Auf den ersten Blick spricht Wittgenstein hier über periphere Phänomene. Hinter diesen stecken aber bedeutendere Mängel: Sieht jemand eine schwarzweiße Fotografie farblos und die an ihr freilich als klein abgebildeten Leute winzig klein, so heißt es auch, daß er nicht imstande ist, das Bild auch anders zu sehen, als es sich bloß nach seinen physikalischen Eigenschaften den Augen darbietet. Er ist also nicht imstande, es unter diesem und gleichzeitig auch jenem Aspekt zu sehen, wie es an einer anderen Stelle bezüglich eines Fotos von einem blonden Jungen heißt:

Schließe ich nur, daß, was auf dem Bild so aussieht, in Wirklichkeit blond sein muß?

In einem Sinne sehe ich [die Haare] blond, in einem anderen heller und dunkler grau. (MS 173: 80v)

Der Aspektblinde ist also auch dort auf das Ziehen von Schlüssen angewiesen, wo wir mit einem *so und anders sehen* zurechtkommen.

Wir würden es freilich etwas merkwürdig finden, daß jemand so eine Einstellung, die sich etwa in einem Ausruf “Welche herrliche Aussicht!” äußert, zu einem Bild nicht haben kann. Die Wichtigkeit so einer spontanen, einfühlsamen Äußerung zeigt sich aber vielmehr beim Fehlen dieser Einstellung, nämlich darin, daß der Aspektblinde ein Foto nicht einfach versteht, sondern es verstehen lernen, ihm wie einem Diagramm den Sinn entnehmen, es sozusagen entziffern muß. Er muß also das Foto *erst deuten*, um zu *wissen*, was es darstellt. Ohne es zunächst gedeutet zu haben, zerfällt für ihn der Sinn der Abbildung, und er sieht nur zusammenhangslose Bestandteile. Hier hat also gerade die Aspektblindheit zur Folge, daß der Betreffende etwas nur deuten, nicht aber reibungslos, spontan sehen und verstehen kann. Der Tatbestand, daß bei ihm das Deuten immer dem Verstehen vorangeht, legt nahe, daß seine Handlungen und somit auch seine Sprechhandlungen steifer sind als die unseren – daß er “einen weniger lebendigeren Eindruck mach[t] als wir” (MS 130: 262, TSS 229: 236–237, 245: 170).⁶

2. Ausdrucksvoll vorlesen

Im folgenden werde ich eine Textstelle aus MS 144 eingehend auslegen, in der Bilder und Töne im Vordergrund stehen, dabei aber auch Themen erscheinen, die ihre Darstellung in den Interpretationsraum von Aspekten und sekundären Bedeutungen stellen.

[1] “Wenn ich ein Gedicht, eine Erzählung mit Empfindung lese, so geht doch etwas in mir vor, was nicht vorgeht, wenn ich (die)⁷ Zeilen nur der Information wegen überfliege.” [2] Auf welche Vorgänge spiele ich an? – Die Sätze klingen anders. Ich achte genau auf den Tonfall. Manchmal hat ein Wort einen falschen Ton, tritt zu sehr, oder zu wenig hervor. Ich merke es und mein Gesicht drückt es aus. Ich könnte später über die Einzelheiten meines Vortrags reden, z.B. über die Unrichtigkeiten im Ton. [3] Manchmal schwebt⁸ mir ein Bild, gleichsam eine Illustration vor. Ja, dies scheint mir zu helfen, im richtigen Ausdruck zu lesen. Und dergleichen könnte ich noch manches anführen. [4] Ich kann auch einem Wort einen Ton verleihen, der seine Bedeutung, beinahe als wäre das Wort ein Bild der Sache, aus den übrigen heraushebt. (Und dies kann natürlich durch den Bau des Satzes bedingt sein.)

[5] Wenn ich beim ausdrucksvollen Lesen dies Wort ausspreche, ist es ganz mit seiner Bedeutung angefüllt. – “Wie kann das sein, wenn Bedeutung der Gebrauch des Wortes ist?” [6] Nun, mein Ausdruck war bildlich gemeint. Aber nicht, als hätte ich das Bild gewählt, sondern es drängte sich mir auf. – Aber die bildliche Verwendung des Wortes konnte⁹ ja mit der ursprünglichen nicht in Konflikt geraten.

Warum gerade dies Bild sich mir darbietet, ließe sich vielleicht erklären. (Denke nur an den Ausdruck und die Bedeutung des Ausdrucks “das treffende Wort”.)

[7] Wenn mir aber¹⁰ der Satz wie ein Wortgemälde vorkommen kann, ja das einzelne Wort im Satz wie ein Bild, dann ist es nicht mehr so verwunderlich, daß ein Wort, isoliert und ohne Zweck

ausgesprochen, eine bestimmte Bedeutung in sich zu tragen scheinen kann. (MS 144: 76–77/PU–KGE 1060–1061. Die Numerierung in eckigen Klammern stammt von mir und dient bloß als Hilfsmittel zur folgenden Textanalyse.)

Wittgenstein startet seine Ausführungen anscheinend mit einem Dialog mit einem Diskussionspartner, wobei der Dialog aber allmählich vielmehr in ein Selbstgespräch übergeht.

Zum Ausgangspunkt der Überlegungskette werden literarische Kunstwerke genommen, zu denen zwei Methoden des Lesens angeboten werden: man würde entweder der puren Information wegen lesen, oder aber “mit Empfindung” [1], wozu wir gleich auch das Wort “ausdrucksvoll” unter [5] hinzufügen können. Indes der Diskussionspartner auf die inneren Vorgänge während des empfindungsvollen Lesens anspielt, übersetzt Wittgenstein in [2] die “inneren Vorgänge” gleich in die Frage, wie sie *sich äußern*. Nun, der Ausdruck, die Empfindungen äußern sich erstens darin, wie die Sätze klingen und im Tonfall – an die Stelle der Empfindungen und Gefühle treten also die Töne. “Mit Empfindung lesen” wird von Wittgenstein also symptomatisch sofort in “vorlesen” übertragen. Die *Stimmhaftigkeit* wird sodann [3] mit der *Bildhaftigkeit* ergänzt: Illustrationen und Bilder fördern sogar das ausdrucksvolle Lesen. Dabei wirft die Formulierung Wittgensteins “manchmal schwebt mir ein Bild vor” allerdings die Frage auf, ob es nicht dennoch wenigstens manchmal auf etwas im Inneren ankommen kann: Ein Bild pflegt einem auf jeden Fall nicht draußen in der physikalischen Welt vorzuschweben, sondern es erscheint ihm vielmehr sozusagen vor seinen inneren Augen. Nicht nur Bilder können dem ausdrucksvollen Lesen beisteuern, sondern auch umgekehrt: nach [4] kann uns auch die Betonung zum Erfassen der Bedeutung unserer Lektüre helfen und noch mehr: sogar die Bildhaftigkeit unterstützen. (In ähnlichem Sinne äußert sich Wittgenstein auch in einem früheren Manuskriptband, was auch dafür spricht, daß er sich in den obigen Zeilen nicht versprochen, sondern eine Position überlegt vertreten hat: “Wenn man vorliest und gut vorlesen will, begleitet man die Worte mit stärkeren Vorstellungen. Wenigstens ist es oft so. Manchmal aber [‘Nach Korinthus von Athen ...’]¹¹ ist es die Interpunktion, d.h., die genaue Intonation und die Länge der Pausen, auf die uns alles ankommt.” [MS 131: 43–44] Auf der einen Seite behauptet Wittgenstein auch hier, daß Vorstellungen – und Vorstellungen sind für ihn in einem Sinne zumindest immer auch Bilder – das gute Vorlesen unterstützen kön-

nen, auf der anderen Seite kann aber für uns auch die Intonation, d.h. die tonhafte Seite denselben Dienst tun.)

Das Gesagte ergibt eine Art der Rezeption von Literatur, die mit Bildern und Tönen verbunden ist, und legt sogar nahe, daß diese Verbindung die adäquate Rezeption fördert (oder zumindest fördern kann). Beim näheren Hinsehen ist allerdings der Zusammenhang vielmehr ambivalent: die Verbindung des Lesens (und somit auch jene des Verstehens) mit Bildern und Tönen erscheint nicht weniger gefährlich als nützlich. Auf so eine Gefahr kann schon [3] mit den "vorschwebenden Bildern" hindeuten. Darauf lesen wir unter [4], daß das Wort als *Bild der Sache* erscheinen kann. Die Theorie, der zufolge die Sprache bzw. die Wörter die Dinge der Welt abbilden würden, war für Wittgenstein aber schon immer ein schwarzes Schaf: Sie hatte für ihn nämlich die Gefahr, die Funktion der Sprache erstens auf den Gegenstandsbezug einzuschränken und dadurch die Bedeutung der Wörter durch ihren Wirklichkeitsbezug und nicht durch ihren Gebrauch zu erklären. Unter [5] macht uns Wittgenstein noch auf eine zweite Gefahr aufmerksam, und zwar darauf, daß die Wörter beim ausdrucksvollen Lesen mit seinen Bedeutungen "angefüllt" erscheinen können – in dieser Formulierung kommt hier das früher erwähnte Phänomen, daß ein Ausdruck von Erlebnissen "geladen" sein kann, wieder. Dabei weist Wittgenstein explizit auf die Schwierigkeit hin, ob sich dies damit vereinbaren läßt, daß "die Bedeutung der Gebrauch des Wortes ist".¹²

Die erste Antwort auf seine Frage gibt Wittgenstein unter [6] – und ab diesem Punkt übernimmt er schon ganz das Gespräch: wir lesen also keinen Dialog mehr mit einem Diskussionspartner, sondern Wittgenstein spricht mit sich selbst, und somit sind es seine Überlegungen *pro und contra*. Wenn er sich dabei an jemanden wendet, dann weniger an seinen Gesprächspartner als an seine Leser. Wittgensteins erste Antwort lautet, daß der Ausdruck bildlich gemeint war. Wenn dies für ihn als hinreichende Widerlegung erscheinen kann, so nur dann, wenn es heißt, daß die Relation Bedeutung – Gebrauch durch einen bildlichen Ausdruck, der wohl als solcher zu dieser Frage nicht Stellung nimmt, nicht in Gefahr gebracht werden kann. Zweitens behauptet er, daß das Bild kein Resultat einer eigenen Entscheidung von sich selbst als Sprecher zwischen mehreren Formulierungsmöglichkeiten gewesen ist, sondern es hat sich ihm sozusagen aufgezwungen. Wenn es aber so ist, dann muß das Bild schon etwas an sich haben – es ließe sich ja, wie Wittgenstein hinzufügt, vielleicht sogar erklären, wobei er im selben Atemzug auf den Ausdruck "das treffende Wort" hinweist. Ein "tref-

fendes Wort” ist aber für ihn in seinen letzten Jahren ein Wort, das auf keine Rechtfertigung angewiesen ist: es ist ja *eben* das treffende Wort und mehr kann man dazu nicht sagen (vgl. MSS 130: 134, 131: 200, TSS 229: 207, 220, 279, 245: 144, 205). Darüber hinaus fügt sich die Passage [6] in Wittgensteins Ausführungen zu Themen der “sekundären Bedeutung” und des “Aspektwechsels”: Wörter in ihrer sekundären Bedeutung benutzt sind für ihn solche, die, anstatt von uns gewählt werden zu können, sich uns aufdrängen. Ein “treffendes Wort” kann einen Aspekt ausdrücken – man findet es, indem man gerade einen Aspektwechsel erlebt; darüber hinaus hat für uns ein “treffendes Wort” eine bestimmte Aura und ist somit mit einem Bedeutungserlebnis verbunden.

Die oben zitierten Passagen werden in MS 144 in der Tat mit Überlegungen zu Fragen fortgesetzt, was es heißen kann, ein Wort einmal so und einmal so zu erleben, und ob Mittwoch eher dick oder mager ist (MS 144: 78–80). Dabei spricht sich Wittgenstein folgendermaßen aus:

Aber es bleibt dann die Frage, warum wir denn bei diesem Spiel des Worterlebens auch von ‘Bedeutung’ und ‘Meinen’ sprechen. – Das ist eine Frage anderer Art. – Es ist¹³ die charakteristische Erscheinung dieses Sprachspiels, daß wir, in dieser Situation, sagen¹⁴ wir hätten das Wort in der Bedeutung ausgesprochen, und diesen Situation aus jenem¹⁵ andern Sprachspiel herübernehmen.

Nenn es einen Traum. Es ändert nichts.¹⁶ (MS 144: 79–80/PU–KGE 1062)

Erstens spricht hier Wittgenstein von dem *Spiel* des Worterlebens und dem *Sprachspiel* der sekundären Bedeutung. Die Möglichkeit als Sprachspiel gespielt zu werden ist im Spätwerk zweifellos ein Legitimationsgrund. Durch die obigen Zeilen wird also die sekundäre Bedeutung legitimiert: es geht um ein Sprachspiel, das gespielt wird, und in dem Sinne ist eine Redewendung dieser Art legitim. Selbst wenn die sekundäre Bedeutung bloß ein “Traum” oder eine Illusion wäre, wäre sie ein Traum, der dennoch geträumt wurde, und eine Illusion, die man hat, und zumindest in diesem Sinne soll ihr also auch eine Realität zugeschrieben werden.

Dies kann uns möglicherweise auch dem Sinn des Teils [7] unseres Zitats näherbringen. Diese Zeilen beinhalten erstens implizit die Behauptung, daß es durchaus möglich ist, daß uns ein Wort oder ein Satz als Bild

oder Gemälde vorkommt. Das Wort “vorkommen” weist zwar einerseits auf eine Art Scheincharakter des Phänomens hin; andererseits wird zumindest von einem ‘gut begründeten Schein’ gesprochen. Parallel dazu spricht sich Wittgenstein explizit dafür aus, daß man sich nicht darüber wundern solle, daß ein isoliertes Wort “eine bestimmte Bedeutung in sich zu tragen SCHEINEN kann”. Es geht also zwar wiederum nur um einen Schein, aber von einem, dem – man sollte sich ja nach Wittgenstein nicht mehr über das Phänomen wundern – eine Art Natürlichkeit und somit auch eine Realität zukommen.

3. Ergänzende Bemerkungen

Ich möchte nun die obige Auslegung mit einigen weiteren Stellen aus dem Nachlaß untermauern bzw. ergänzen.

1. Wenden wir uns zuerst einer früheren Version unserer Textstelle aus TS 229 (S. 437–438, Bemerkungen 1726–1729) zu, die im Großen und Ganzen schon mit der Version in MS 144 übereinstimmt, in mancher Hinsicht aber die Tendenz klarer zeigt als die spätere Fassung. Schon der Auftakt der Bemerkungskette in TS 229 zeigt expliziter als die spätere Formulierung, worauf Wittgenstein hinaus will:

1726. [...] Wenn ich ein Gedicht, oder ausdrucksvolle Prosa lese, besonders, wenn ich sie laut lese, so geht doch beim Lesen etwas vor, was nicht vorgeht, wenn ich die Sätze nur {ihrer / der} Information wegen {lese. / überfliege.}

Erstens wird schon hier – und nicht erst später, wie in MS 144 – *ausdrucksvolles* Lesen als angestrebter Zweck eingeführt; zweitens wird im Gegensatz zu MS 144 vom *lauten* Lesen explizit gesprochen. Die Stimmhaftigkeit als Moment wird also in TS 229 gleich eingangs angesprochen, sogar durch das Wort “besonders” hervorgehoben: insbesondere das laute Lesen ist es, welches uns nahelegt (oder uns nur einbilden läßt?), daß ein innerer Vorgang beim Lesen stattfindet. Die Töne erscheinen also hier schon eingangs dubios.

Bemerkung 1728 und 1729 in TS 229 sprechen sich noch entschiedener als MS 144 dafür aus, daß an der Neigung, über ein so oder so Verstehen

von (isolierten) Wörtern zu reden, diese in sekundärer Bedeutung zu benutzen, nichts auszusetzen ist:

1728. [...] Warum aber soll ich dann nicht auch ‘*sagen wollen*’ ich hab das Wort (isoliert) in *dieser* Bedeutung ausgesprochen?

1729. Warum soll mich eine bestimmte Technik der Verwendung der Worte “Bedeutung”, “meinen” und anderer nicht dazu führen, diese Worte sozusagen in einem bildlichen, uneigentlichen Sinne zu gebrauchen?

Gleich auf diese Sätze erwähnt Wittgenstein eines seiner Paradebeispiele für die sekundäre Bedeutung, nämlich daß der Laut *e* gelb genannt werden kann, und expliziert zum Schluß, daß es kein Irrtum, keine Einbildung sei, das Wort in sekundärer Bedeutung ausgesprochen zu haben:

Ich meine aber nicht: es sei {ein *Irrtum* {, / –} ich habe das Wort nicht *wirklich* in dieser Bedeutung ausgesprochen, sondern mir’s nur eingeblidet. Nicht so ist es. / ein *Irrtum*: ich habe mir nur eingeblidet, das Wort in dieser Bedeutung auszusprechen. Nicht *so* ist es.} Ich bilde mir ja auch nicht bloß ein, es werde im “Nathan” Schach gespielt.

In der ersten Version dieser Passage schreibt Wittgenstein dem Phänomen durch das Wort “*wirklich*” sogar Wirklichkeit zu. Der Schluß mit dem Hinweis auf den *Nathan*, i.e. auf ein fiktionales literarisches Werk, läßt die Konklusion dennoch etwas schwebend: In welchem Sinne des Wortes ist eine Schachpartie in einem fiktionalen Werk, in einem Theaterstück – obschon auf der Bühne handgreiflich gespielt – wirklich? Und was hat sie mit Partien, welche wir in der Wirklichkeit spielen, zu tun? Der letzte Satz der Bemerkungskette weist also wieder in die Richtung der Lösung von MS 144, wo das Wort “scheinen” ebenfalls eine Unentschiedenheit in die Konklusion gebracht hat.

2. Zweitens möchte ich noch einiges zu der Frage sagen, inwieweit die Ansichten, mit denen Wittgenstein seine Überlegungen in MS 144 beginnt, bloß einem fiktiven Diskussionspartner zuzuschreiben sind.

Im Synopsisband TS 228 schreibt Wittgenstein wie folgt:

Wir können uns eine Sprache denken, in deren Verwendung das Gefühl, das unsern Worten anhaftet, keine Rolle spielt; in der es ein Verstehen des Wortcharakters nicht gibt. Die Wörter werden uns etwa wie die Symbole der chemischen Zeichensprache übermittelt und erhalten keinen Dunstkreis. Wenn dann z.B. ein Befehl gegeben wird, so übertragen wir die Zeichen nach Regeln, Tabellen, in Handlung. Zum Eindruck, ähnlich dem eines gemalten Bildes, kommt es nicht, und es wird in dieser Sprache nicht gedichtet. (TS 228: 112-113)

Diese Zeilen stellen eine direkte Rede von Wittgenstein dar. Sie sind auf Oppositionen aufgebaut: Auf der einen Seite steht eine Sprache, an deren Verwendung ein Gefühl haftet, in der es zum Eindruck kommt und die Wörter einen Dunstkreis erhalten. Auf der anderen Seite steht hingegen eine Zeichensprache, für die all das nicht zutrifft, stattdessen aber jeder Sprechakt sozusagen ein Übersetzen ist. Eine Sprache, die nicht ohne Nachdenken, sondern über die Vermittlung von expliziten Regeln gesprochen wird, wurde von dem späten Wittgenstein negativ eingestuft, bzw. er hat so eine Sprache nicht für funktionsfähig gehalten. Wenn also in diesem Absatz neben der negativen auch eine positive Seite skizziert wird, so kann die positive nur die erstere Sprache betreffen, welche die mentalen Phänomene, in welchem Sinne auch immer – ausgesprochen oder nur implizit, gewollt oder ungewollt –, aber trotzdem in Betracht zieht. Das Mentale erscheint auch hier wie in MS 144 mit Bildern, noch mehr: wieder mit Kunstwerken verbunden. Die Bilder sind nämlich gemalte Bilder, und es wird in dieser Sprache – im Gegensatz zu einer chemischen Zeichensprache – auch gedichtet.

Diese Stelle wurde von Wittgenstein in TS 230 geringfügig weiterbearbeitet. Dabei hat er im ersten Satz das Wort “Gefühl” durch Sperrung hervorgehoben, darüber hinaus nach dem “Verstehen des Wortcharakters” noch ein Verstehen “der Seele des Wortes” eingefügt, wodurch die mentale Seite noch mehr Nachdruck bekommen hat. TS 230 war das letzte Typoskript, das die *Philosophischen Untersuchungen* vorbereitet hat. Die obigen Zeilen wurden zwar in die PU nicht übernommen, die “Seele der Worte” kommt aber auch hier in einer Bemerkung verwandten Inhalts – wenn auch nur in Anführungszeichen, aber dennoch wenigstens gewissermaßen ernst gemeint – vor:

Es könnte auch eine Sprache geben, in deren Verwendung die ‘Seele’ der Worte keine Rolle spielt. In der uns z.B. nichts daran liegt, ein Wort durch ein beliebig erfundenes neues zu ersetzen.
(PU 530)

In der folgenden Bemerkung der PU kommt Wittgenstein auf die Frage zu sprechen, inwieweit sich ein Satz durch einen anderen ersetzen läßt, und nennt für die Nicht-Ersetzbarkeit ein musikalisches Thema und ein Gedicht als Beispiele. Erstens werden also hier wieder Kunstwerke im Kontext von “Seele” erwähnt. Zweitens gehört Nicht-Ersetzbarkeit auch zu den Merkmalen eines “treffenden Wortes” – so sind wir also wieder bei Stichworten unseres Zitats aus MS 144.

Diese Belege geben zumindest den Grund, uns zu überlegen, ob sich Wittgenstein vom Standpunkt seines Gesprächspartners in MS 144 eindeutig distanziert, oder aber doch einiges davon teilt. Dafür, daß letzteres auch der Fall sein kann, können schon die Abschnitte [2-3-4] im Zitat aus MS 144 sprechen. Obschon Wittgenstein zu Beginn seiner Gegenargumente vielmehr nahelegt, daß nicht innere, sondern ausschließlich öffentlich zugängliche Vorgänge im Spiel sein können, akzeptiert er schon mit seiner zweiten Antwort unter [3] Vorstellungen als solche, die doch eine gewisse Rolle spielen können. Und daß die Stelle durchaus nicht ‘dogmatisch wittgensteinianisch’ ist, sondern sich ernsthaft auch andere Möglichkeiten überlegt, dafür spricht noch [4], wo das Wort “als Bild der Sache” aufgefaßt dem Verstehensprozeß beiträgt.

4. **Schlußbemerkungen**

Wir haben gezeigt, wie sich die tonhafte Seite mit der bildhaften verknüpft. Diese Verknüpfung könnte man sogar ‘synästhetisch’ nennen. Die synästhetische Betrachtungsweise ist für die letzte Periode Wittgensteins ab 1946 insbesondere charakteristisch: die Begriffe von Aspektwechsel, Bedeutungserlebnis und sekundärer Bedeutung, von denen er zu dieser Zeit ein begriffliches Netz spinnt, erscheinen öfters mit Ton und Bild gleichzeitig verbunden.

Schon die Paradebeispiele für die sekundäre Bedeutung – “der Vokal *e* ist gelb”, “der Laut *a* ist rot” – beinhalten Synästhesien. Formulierungen den Aspektwechsel betreffend nennen ebenfalls oft Bilder und Töne nebeneinander, wie etwa in den folgenden Stellen:

Es ist beinahe, als ob das ‘*SEHEN* des Zeichens in diesem Zusammenhang’ ein NACHHALL eines Gedankens wäre.

“Ein im SEHEN NACHHALLENDER Gedanke” – möchte man sagen. (MS 144: 71/PU-KGE 1053, vgl. MSS 132: 117, 138: 4b, PU II 549)

Nachdem am Aspektsehen freilich ein Sehen beteiligt ist, gilt schon die Erwähnung der tonhaften Seite alleine in diesem Zusammenhang als synästhetische Verbindung:

Einen Aspekt möchte man oft vergleichen (mit) einer angeschlagenen Note, die AUSKLINGT. (MS 135: 41)

es ist als wäre der Aspekt ein unartikulierter FORTKLANG eines Gedankens. (MS 135: 50, TSS 229: 430, 245: 307)

es ist als hätte der Gedanke eine GLOCKE ANGESCHLAGEN, die nun weiter SCHWINGE. (MS 136: 108a)

Wie vorhin gesagt, ist Wittgensteins Stellungnahme zu Aspektsehen und Aspektwechsel, Bedeutungserlebnis und sekundärer Bedeutung wenigstens ambivalent zu nennen: diese sind für ihn Begriffe bzw. Phänomene, denen sich das Epitheton “verdächtig” mit Recht zuschreiben läßt, und die daher auch gefährlich sein können. In der folgenden Stelle thematisiert Wittgenstein eben die Gefahren, die er anhand eines Gleichnisses mit Bildhaftigkeit (konkret mit einem Gemälde, d.h. wieder mit einem Kunstwerk), darüber hinaus auch noch auf Tonhaftigkeit verweisend, veranschaulicht. Dabei taucht der oben bereits eher in positivem Sinne erwähnte “Dunstkreis” um die Wörter auf, diesmal aber mit eindeutig negativem Akzent:

Denk Dir, Einer sagte: jedes uns wohlbekannte Wort, eines Buchs z.B., habe in unserm Geist(e) schon einen Dunstkreis, einen ‘Hof’ schwach angedeuteter Verwendungen um sich¹⁷. – So, als wäre auf einem GEMÄLDE jede der Figuren auch von zarten, nebelhaft gezeichneten Szenen, gleichsam in einer andern¹⁸ Dimension, umgeben, und wir sähen die¹⁹ Figuren hier²⁰ in andern Zusammenhängen. – Machen wir nur Ernst mit dieser Annahme! – Da zeigt es sich, daß sie die Intention nicht zu erklären vermag.

Wenn es nämlich so ist, daß die Möglichkeiten der Verwendung eines Wortes²¹ beim SPRECHEN oder²² HÖREN uns in HALBTÖNEN vorschweben – wenn²³ es so ist, so gilt das eben für uns. Aber wir verständigen uns mit Andern, ohne zu wissen, ob auch sie diese Erlebnisse haben. (MS 144: 15, in PU-KGE 1005, vgl. MS 131: 92-93, TSS 229: 258-259, 245: 190, PU II 500)

Es ist eine merkwürdige Entwicklung der Spätphilosophie Wittgensteins nach 1946, daß wir uns dank der Töne in solche schillernden Zweideutigkeiten verwickeln – er schreibt ja sonst bekanntlich der stimmhaften Seite der Sprache eine gewichtige und positive Rolle zu. Den folgenden Satz wiederholt er mehrmals:

In der Wortsprache ist ein starkes musikalisches Element. (Ein Seufzer, der Tonfall der Frage, der Verkündigung, der Sehnsucht, alle die unzähligen Gesten des Tonfalls.) (MS 134: 77, TSS 229: 396, 233a: 36, 245: 285)

Wittgenstein hat auch bei der Formulierung seiner eigenen Sätze mit großer Sorgfalt auf die stimmhafte Seite geachtet: er hat sie so formuliert, daß sie gut vorlesbar werden. Dafür spricht auf jeden Fall seine ständige Mühe darum, den besten Rhythmus zu finden und anhand der Interpunktionszeichen und verschiedener Arten von Unterstreichungen dem Leser die richtige Betonung und Lesart der Sätze nahezu legen²⁴. Noch mehr: nicht nur in der Intonation spielt das musikalische Element eine große Rolle, sondern Interpreten haben sogar dafür Belege gefunden, daß sich der Aufbau der Argumentation Wittgensteins und die Komposition seiner Schriften musikalisch oder zumindest in Analogie zur Musik auffassen lassen²⁵. Durch die dargelegten Dilemmata sowohl in Kontexten mit Aspektsehen und -wechsel, Bedeutungserlebnis und sekundärer Bedeutung als auch außerhalb von solchen Zusammenhängen werden Töne von ihrem Thron gestoßen und verwandeln sich in verführerischen Sirenengesang. Ähnliches gilt wohl auch für die Position der Bilder im Spätwerk.²⁶

Das Gesagte wirft bestimmt noch weitere Fragen auf, denen gründlicher nachzugehen es sich lohnen würde, von denen ich hier aber nur noch eine erwähnen kann. Wittgenstein hat nicht bloß der stimmhaften Seite der Gestaltung seiner Bemerkungsketten große Aufmerksamkeit gewidmet, sondern auch sozusagen der dichterischen oder künstlerischen. Dieses

Bestreben von ihm äußert sich u.a. im Satz “Philosophie dürfte man eigentlich nur dichten” (MSS 115: 30, 146: 50). Sowohl im literarischen und künstlerischen Schaffen als auch im Rezipieren bzw. Verstehen von literarischen und künstlerischen Werken spielen für Wittgenstein die Fähigkeiten, Aspektwechsel zu sehen, Bedeutungserlebnisse zu haben, Wörter in sekundären Bedeutungen zu verstehen und zu verwenden, eine eminente Rolle.²⁷ Aspektsehen und -wechsel haben an der philosophischen Therapie ebenfalls ihren Anteil, dafür sprechen mehrere Textstellen im Nachlaß, worauf ich in meinen früheren Arbeiten bereits hingewiesen habe: die philosophische Therapie Wittgensteins bietet neue Darstellungsformen, i.e. neue Aspekte für seinen Leser an, die zum Zweck haben, den “Leser in den Stand [zu] setzen, sich in begrifflichen Unklarheiten zu helfen” (MSS 137: 143a, 144: 91, vgl. PU II 539). Um dies zu erreichen, werden neue *Bilder* und *Vergleiche* in einer übersichtlichen Darstellung vor die Augen des Lesers gestellt (MSS 124: 68, 161: 70v), die eine Analogiereihe bilden und ihn neue Zusammenhänge sehen lassen. Das ist der eine mögliche Sinn, in dem Philosophie gedichtet wird.²⁸

Wenn aber die Begriffe von Aspektwechsel, Bedeutungserlebnis und sekundärer Bedeutung so verdächtig sind, wie wir es gesehen haben, dann erhebt sich auch die Frage, inwieweit sich dies auf Literatur und Kunst bzw. auf die philosophische Therapie auswirkt: ob nicht auch diese in Verdacht kommen können. Die letztere Möglichkeit wird bezüglich der Kunst noch mehr nahegelegt dadurch, daß Bilder und Töne, insbesondere ihre Dubiosität immer wieder im Zusammenhang mit literarischen und malerischen Werken auftauchen. Dadurch drängt sich die Frage auf, ob Literatur und Kunst für Wittgenstein nicht doch verdächtige Geschäfte sind, welche sich nicht ohne weiteres in den Rahmen seiner Konzeption – die wir hier der Kürze halber als die des sogenannten ersten Teils der *Philosophischen Untersuchungen* bezeichnen möchten – einfügen. Es stellt sich die Frage, ob sein ständiges Bemühen, Literatur und Kunst als Sprachspiele zu beschreiben, nicht u.a. ein Versuch ist, die verdächtige Dubiosität der beiden – die sich insbesondere in ihrer Affinität zum Mentalen zeigt – zu bekämpfen; ob die Dubiosität mit den Begriffen von Aspektsehen etc. in seinen letzten Jahren nicht doch schleichend zurückkommt; und ob, bzw. in welchem Sinne, die nämlichen Begriffe auf die philosophische Therapie eine Auswirkung haben können. Die genannten Fragen bezüglich der Malerei und Literatur wurden von Wittgenstein zumindest in dem Sinne expliziert, daß sie sich seinen oben ausgelegten Ausführungen zu Kunst und Literatur

entnehmen lassen. Das Problem die philosophische Therapie betreffend ist hingegen eines, dessen Wittgenstein sich bestimmt nicht bewußt gewesen ist; er hat wohl nicht einmal geahnt, sich so einer Gefahr ausgesetzt zu haben – das ist aber eine Gefahr, die sich aus der Logik der charakteristischen Begriffe von Wittgensteins Lebensabend ergeben kann.

Literatur

Wittgensteins Werke

BEE = *Wittgenstein's Nachlaß. The Bergen Electronic Edition*. Oxford: Oxford University Press 2000. Ich zitiere zwar die “normalisierte” Version, ich ergänze sie aber mit allen Textvarianten, die Wittgenstein nicht gestrichen, sondern stehen gelassen hat. In den Zitaten hab ich die Transkription der BEE überprüft, darüber hinaus Wittgensteins Leerzeilen und Hervorhebungen verschiedener Art wiederhergestellt. Zitate aus dem Nachlaß werden, wenn nichts anders angemerkt, der BEE entnommen.

PU = *Philosophische Untersuchungen*. Hrsg. von Joachim Schulte. Frankfurt: Suhrkamp 2003.

PU-KGE = *Philosophische Untersuchungen*. Kritisch-genetische Edition. Herausgegeben von Joachim Schulte in Zusammenarbeit mit Heikki Nyman, Eike von Savigny und Georg Henrik von Wright. Frankfurt: Suhrkamp 2001. MS 144 wird auf der Grundlage dieser Edition zitiert. Die Fußnoten zu den Zitaten aus MS 144 stammen von Joachim Schulte, wobei Schultes editorische Bemerkungen in Kursivschrift und Wittgensteins Text in Normalschrift erscheinen.

PU II = *Philosophische Untersuchungen*, Teil II. In: *Werkausgabe in 8 Bänden*. Frankfurt: Suhrkamp 1984, Bd. 1, 487-580.

Legende zu den Zitaten aus den Nachlaßstücken (aus BEE und PU-KGE):

Textvarianten	{.../...}
Sperrung in Typoskripten	<i>Kursiv</i>
Einfache Unterstreichung	<u>einfache Unterstreichung</u>
Gewellte Unterstreichung	gewellte Unterstreichung
Meine Hervorhebungen	KAPITÄLCHEN

Ich habe hier nur Arten von Hervorhebungen angeführt, die Wittgenstein in den im Aufsatz zitierten Stellen tatsächlich benutzt hat.

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Endnoten

1. Der Aufsatz ist eine Fortsetzung der in Neumer 2004a dargelegten Analyse. Für sprachliche Korrektur und Ratschläge bedanke ich mich bei Volker Munz, Alois Pichler und Sascha Windholz.
2. Vgl. Nyíri 1992, 1996/97, Roser 1996/97 und eine nuanciertere Version Roser 2007.
3. Den Ausdruck benutzt Wittgenstein im Zusammenhang mit dem sprachlichen Bild "Atmosphäre" (MS 129: 99, MS 180a: 18v, TS 228: 68, TS 233a: 8).
4. Anderswo habe ich es bereits getan: Neumer 2007, Punt II, Neumer 2004a; vgl. Neumer 2000: 115–195, Neumer 2004b: 117–123.
5. *Var* verschiedenen *PU* mehreren
6. Zu Aspektblindheit siehe ausführlicher Neumer 2007, Neumer 2004a: 258ff, Neumer 2000: 123ff, 188ff.
7. *Klammern nicht in PU*
8. *PU* Manchmal, schwebt
9. *Var* kann *So in PU*

10. *UrMS* Wenn ich aber sagen will
11. Die eckigen Klammern stammen von Wittgenstein selbst.
12. Dazu, daß Wittgenstein “Gebrauch” und “Bedeutung” einander nicht dogmatisch und eindeutig zugeordnet hat, siehe Neumer 2000: 115ff.
13. Durchgestrichen: ~~ja eben~~
14. *Streichung sagen rückgängig gemacht. Var* den Ausdruck gebrauchen *PU* den Ausdruck gebrauchen
15. *Var* ~~dem~~ *PU* jenem
16. *Dieser Absatz durch Einfügungszeichen und Anm. an diese Stelle verschoben*
17. *PU* in sich
18. *PU* anderen
19. *Var* diese *PU* die
20. *UrMS* wir sähen hier die Figuren
21. Durchgestrichen: ~~uns~~
22. *PU* Sprechen, oder
23. *PU* vorschweben, – wenn
24. Pichler 1993: 23-24.
25. Keicher 2000.
26. Somit muß man sich freilich auch neu überlegen, ob der späte Wittgenstein in der Tat bzw. in dem Maße für die Mündlichkeit hat plädieren, und ob er den Bildern wirklich und vor allem: so eindeutig eine gewichtige und positive Rolle hat zuschreiben wollen, wie manche Interpreten es wännen.
27. Vgl. Neumer 2004a: 263ff, Majetschak 2007: 58ff.
28. Vgl. Neumer 2004c: 114ff, Neumer 2000: 74f.

Mathematical Sense: Wittgenstein's Syntactical Structuralism

VICTOR RODYCH, LETHBRIDGE

1. Introduction

Stated dogmatically, on Wittgenstein's unorthodox view of mathematics, only algorithmically decidable concatenations of 'signs' are mathematical propositions and only *proved* mathematical propositions have mathematical *sense* ('Sinn'). If, e.g., we do not know of an applicable and effective decision procedure for deciding Goldbach's Conjecture (hereafter 'GC') in any existent mathematical calculus, GC is *not* a mathematical proposition, and if we prove GC in, say, Peano Arithmetic (PA) tomorrow, GC is a *new* mathematical proposition with a *new* sense in a *newly* created calculus, PA₂.

Stated equally dogmatically, on Wittgenstein's unorthodox view of mathematics, only 'axioms' and *proved* concatenations of 'signs' are mathematical propositions with mathematical *sense* (hereafter, "concatenation(s) of 'signs'" will be abbreviated as 'Csign(s)'). Not only is GC not a mathematical proposition before it is decided, " $28 \times 76 = 2228$ " is *also* not a mathematical proposition before it is decided by a decision procedure, and when it is 'refuted' it is still not a mathematical proposition.

These two incompatible articulations of Wittgenstein's position reflect, as we shall see, Wittgenstein's (apparently) incomplete ruminations on a number of inter-connected issues. Each account has drawbacks for Wittgenstein's core view, but, as we shall see, the only substantive difference is that, on the second articulation, both *undecided* algorithmically decidable Csigns and algorithmically refuted Csigns are *not* mathematical propositions.

It should go without saying that neither articulation of Wittgenstein's account is the received view of a mathematical proposition and its sense or meaning.

On the received view, a mathematical conjecture, such as GC, is a genuine mathematical proposition, with a fully determinate sense (meaning) and, possibly, a fully determinate truth-value, even if (a) GC is independent

of all existent mathematical calculi and/or (b) we do not have in hand an applicable and effective decision procedure by which to decide it. GC's sense (or meaning) is, simply: Every even number greater than 2 is the sum of two primes. On the received view, GC says (or we use GC to assert) something *about every even number*. We understand GC insofar as we are able to understand this meaning – insofar as we are able to understand what it is, or what it would be like, for every even number greater than 2 to be the sum of two primes (i.e., GC's truth conditions). As a matter of fact, we *do* understand GC because we understand its truth conditions.¹

This paper aims to (1) show *how* Wittgenstein's radical position on a mathematical proposition and its sense results from his life-long view that mathematics is exclusively syntactical and invented by human beings, (2) *propose* a particular conception of “mathematical sense” – and an interpretation of Wittgenstein's remarks – that best resolves the internal tension between two of Wittgenstein's principal views on mathematics (which are detailed in Section 3), and (3) consider some objections to Wittgenstein's view and how he does or might respond to them.

Wittgenstein's reasoning about mathematical sense is best understood in connection with the rest of his radical constructivist philosophy of mathematics. According to this view, human beings invent mathematics *bit-by-little-bit*, which means, in part, that we don't discover *pre-existing* proofs – they exist only when we have constructed them. Furthermore, on Wittgenstein's account: (a) mathematical propositions do not speak about – and are not used by us to make assertions about – infinitely many objects in a real or possible world²; (b) the set of natural numbers is not an infinite extension, but rather a recursive rule for enumerating the naturals; and (c) the so-called provable propositions of, say, PA do not exist already as a set of ‘theorems’ (i.e., it is not a *fact*, today, that GC is provable in PA, even if GC is proved in PA tomorrow). Though Wittgenstein argues for (a)-(c), we will only here see part of his argument for (a).³

2. Propositions, Sense, and Mathematics in the *Tractatus*

As is well known, one of the main aims, if not *the* main aim, of the *Tractatus* is to work out the language-reality connection by determining what is required for language, or language *usage*, to be *about* the world. Wittgenstein's two-pronged, core position in the *Tractatus* is that there is only one

reality (i.e., “the world”)⁴ and propositions, which have sense (‘Sinn’) and which are used by us to make assertions about the world (e.g., to picture or represent a possible state of affairs or a possible fact),⁵ are (or must be) either true or false because they must either agree with the world or disagree with the world (4.022, 4.25, 4.062, 2.222).

Though Wittgenstein abandons some Tractarian positions, he always maintains that the only genuine propositions that we can use to make assertions about reality are ‘empirical’ (contingent) propositions, which are true if they agree with reality and false otherwise.

Wittgenstein’s core Tractarian position immediately yields a conception of mathematics, mathematical propositions, and “mathematical truth.” Since there is only one type of genuine proposition and only one type of genuine truth, it follows that all other apparent propositions are pseudo-propositions of various types and that all other uses of ‘true’ and ‘truth’ deviate markedly from the truth-by-correspondence (or agreement) that contingent propositions have in relation to reality.

In the *Tractatus*, Wittgenstein clearly states (6.2) that “[t]he propositions of mathematics are equations, and therefore pseudo-propositions” – that “[a] proposition of mathematics does not express a thought” (6.21), has no sense, and therefore cannot be used by us to assert that a possible state of affairs or fact exists.⁶ Moreover, “in order to tell whether a picture is true or false we must compare it with reality” (2.223),⁷ from which it follows that “[i]t is impossible to tell from the picture alone whether it is true or false” (2.224), which means that “[t]here are no pictures that are true a priori” (2.225). Thus, if there is something we call “mathematical truth”, it is not agreement with reality and it is not a kind of *a priori* truth (whatever that would be). As Wittgenstein says at (6.2321), “the possibility of proving the propositions of mathematics means simply that their correctness can be perceived without its being necessary that what they express should itself be compared with the facts in order to determine its correctness.”

3. Mathematical Propositions and Mathematical Sense after 1928

When he returns to Philosophy in 1929, Wittgenstein elaborates his Tractarian position by saying that “mathematical propositions so called are not propositions at all” (*LWL* 13) and that “there are no true a priori proposi-

tions” (*LWL* 13).⁸ Indeed, from the *Tractatus* until the end of his life, Wittgenstein maintains that “mathematical propositions” are not real propositions and that “mathematical truth” is essentially non-referential and purely syntactical in nature.

In presenting a positive account of mathematical sense, the intermediate Wittgenstein endeavours to:

1. Distinguish mathematical questions from mathematical problems.
2. Demarcate mathematical propositions from Csigns that are *not* mathematical propositions.
3. Ascertain the relationship between mathematical sense and decidability.
4. Connect mathematical sense to decision procedures.
5. Ascertain the relationship between mathematical sense and mathematical proof.
6. Ascertain whether undecided and refuted “mathematical propositions” have mathematical sense.

To these ends, the middle Wittgenstein *ruminates* in various, evidently incompatible ways and these ruminations provide material for at least the following four positions on mathematical sense.

Strong Verificationism: The sense of a mathematical proposition *is* its proof (i.e., “the verification... is *the* sense of the proposition”) (*PR* §166; *WVC* 227).⁹

Weak Verificationism₁: The sense of a mathematical proposition is (a) *determined by* its proof, which (b) gives the mathematical proposition a *new* sense (c) in a *new* calculus ((a) “[t]he verification [of a mathematical proposition]... *determines* the sense of the proposition” (*PG* 458-459; italics mine)¹⁰; “the proof belongs to the *sense* of the proved proposition, i.e. determines that sense” (*PG* 375); (b) “in proving it we give it a new sense that it didn’t have before” (*PG* 374)¹¹; (c) “a mathematical proof incorporates the mathematical proposition into a new calculus” (*PG* 371)).

Weak Verificationism₂: A Csign constitutes a mathematical proposition – which *has* mathematical sense – *if and only if* it is algorithmically decidable in an existent mathematical calculus *and* we know this to be the case (*PR*

§§149, 151; *PG* 366, 452). The sense of a mathematical proposition is *determined by or corresponds to* a decision procedure (i.e., “[t]he method of checking corresponds to the sense of the mathematical proposition” (*PG* 366; 458-459); “it isn’t as if it were only certain that a mathematical proposition made sense [“has a sense”]¹² when it (or its opposite) had been proved”, for “[t]his would mean that its opposite would never have a sense (Weyl)” (*PR* §148)).

Structuralism: The sense of a mathematical proposition is its syntactical *location* within a calculus and its syntactical connections within that calculus (i.e., “a mathematical proposition is only the immediately visible surface of a whole body of proof and this surface is the boundary facing us” (*PR* §162); “the properties of a number are the properties of a position” (*PG* 457)).¹³

In attempting to distinguish mathematical questions from mathematical problems (#1) and demarcate mathematical propositions from Csigns that are *not* mathematical propositions (#2), Wittgenstein argues (##3, 4, 6) that algorithmically decidable Csigns are mathematical propositions with sense and that refuted propositions *have* sense,¹⁴ since “[i]t obviously makes sense to say ‘I know how you check [“36 x 47 = 128”]’, even before you’ve done so” (*PR* §153). The merit of this position – Wittgenstein’s Weak Verificationism₂ – is that it clearly defines a mathematical proposition as a Csign that is algorithmically decidable in an existent calculus. The problem, however, is that it does not say *what* the sense of a mathematical proposition *is*. In particular, Weak Verificationism₂ says that an undecided mathematical proposition, which is algorithmically decidable, *has sense* (i.e., since it is a *meaningful* or genuine mathematical proposition), whereas Weak Verificationism₁ precludes *undecided* (or perhaps *unproved*) mathematical propositions from having sense.

4. The Tension in Wittgenstein’s Account and Three Incompatible Resolutions

In trying to understand Wittgenstein’s account of mathematical sense, we need not be detained by Strong Verificationism, for Wittgenstein does not maintain this position for very long even in the middle period. The *tension*, however, between Weak Verificationism₁ and Weak Verificationism₂ exists

throughout the middle period and there is evidence that it remains in the later period (e.g., *RFM* V, §9, 1942). To resolve this tension, we must find one or more reasonable interpretations that recognize that a proof gives a “mathematical proposition” “a new sense that it didn’t have before” (*PG* 374), which requires that we drop the Weak Verificationism₂ claim, most notable at (*PR* §148), that algorithmically decidable Csigns have sense *before* they are decided. This *type* of resolution yields the following three incompatible interpretations of the main strands of Wittgenstein’s account.

Weak Verificationist₁ Structuralism (WV₁S)

(A₁): Mathematical Proposition: A Csign is a mathematical proposition *of* calculus Γ *iff* it is algorithmically decidable *in* calculus Γ and we know this to be the case.

(B₁): Having Mathematical Sense: Only primitive propositions (e.g., axioms) and proved propositions of calculus Γ *have* mathematical sense in calculus Γ .¹⁵

(C₁): The Sense of a Mathematical Proposition of Calculus Γ : *is* its syntactical position in the syntactical structure that is calculus Γ .

According to WV₁S, the *sense* that a particular proposition φ of Γ has in Γ is its exact syntactical location in that syntactic structure, which, in part, consists of the syntactical connections φ has with other propositions of Γ , as mediated by the syntactical rules of Γ .

Weak Verificationist₂ Structuralism (WV₂S)

(A₂): Mathematical Proposition: A Csign is a mathematical proposition *of* calculus Γ *iff* it is algorithmically decidable *in* calculus Γ and we know this to be the case.

(B₂): Having Mathematical Sense: All and only propositions *decided* in calculus Γ have mathematical sense in calculus Γ .

(C₂): The Sense of a Mathematical Proposition of Calculus Γ : *is* its syntactical position in the syntactical structure that is calculus Γ (if proved in Γ) or its syntactical *conflict* with a proved proposition in calculus Γ (if refuted).

Weak Verificationist₁ Structuralism (WV₁S₂)¹⁶

(A₃): Mathematical Proposition: A Csign is a mathematical proposition of calculus Γ *iff* either (i) it is a “primitive proposition” (e.g., an axiom) of calculus Γ or (ii) it is a proved proposition in calculus Γ (*RFM* App. III, §6).

(B₃): Having Mathematical Sense: Only primitive propositions (e.g., axioms) and proved propositions of calculus Γ *have* mathematical sense in calculus Γ .

(C₃): The Sense of a Mathematical Proposition of Calculus Γ : *is* its syntactical position in the syntactical structure that is calculus Γ .

5. A Preference for WV₁S

Given his ##1-6 aims, the best and simplest way for Wittgenstein to resolve the aforementioned tension, I believe, is to adopt WV₁S.

WV₁S is preferable to WV₁S₂ in that WV₁S captures Wittgenstein’s use of the Law of the Excluded Middle and algorithmic decidability (see, e.g., *PR* §151, cf. *PR* §§173-174; *PG* 400) as conjoined criteria that define a mathematical proposition relative to a calculus. In the middle period and, it seems, also in the later period, Wittgenstein repeatedly states that a Csign is a mathematical proposition in a particular calculus *iff* the Law of the Excluded Middle applies to it, which means nothing more than we know how to decide it by means of a decision procedure. The problem with WV₁S₂ is that, according to it, a Csign for which we have in hand an applicable and effective decision procedure is *not* a mathematical proposition before it is decided and, if it is refuted, it is still not a mathematical proposition. This conflicts with Wittgenstein’s insistence that if we know how to decide a Csign because we recognize that our decision procedure applies to the Csign’s syntactical structure, then that Csign is a mathematical proposition (i.e., by virtue of its syntactical structure).

As regards WV₂S, WV₁S is preferable to it for two reasons. First, WV₁S better accommodates Wittgenstein’s Structuralism, for if the mathematical sense of a mathematical proposition *is a syntactical position in a structure* (i.e., a syntactical calculus), a Csign that does *not* have a position in a mathematical structure (i.e., a calculus), such as a refuted ‘proposition,’ cannot have mathematical sense. Second, WV₁S better accommodates Wittgenstein’s Weak Verificationism₁ claims that a *proof* – *not* a proof *and* a refutation – “belongs to the *sense* of the proved proposition” (*PG* 375),

“give[s] it a new sense that it didn’t have before” (*PG* 374), and “incorporates the mathematical proposition into a new calculus” (*PG* 371). These three claims about a proof and the sense of the proved proposition go hand-in-hand with Wittgenstein’s Structuralist claim that the sense of a mathematical proposition is its syntactical *location* within a calculus, for a proved proposition is incorporated *into* a new calculus (and the syntactical connections among its propositions), but a refuted ‘proposition’ is not part of the proof-syntactical structure of a mathematical calculus. Indeed, so-called ‘ill-formed’ Csigns (e.g., “ $2 + = 2 = 4$ ”) and syntactically *independent* Csigns are just as much *not* part of the proof-syntactical structure of a mathematical calculus as a refuted mathematical proposition (e.g., “ $2 + 2 = 5$ ”). As Wittgenstein says (*MS* 163, 46v-47r, 1941):

But I always want to say: true and false in mathematics corresponds, in the application to propositions of experience, not to the opposition true-false, but to the distinction between sense and nonsense.

Only a syntactically well-constructed contingent proposition has contingent sense; a nonsensical pseudo-proposition, such as “Socrates is identical” (*Tractatus*, 5.473, 5.4733), does not have sense *because* it is syntactically ill-constructed. A ‘true’ (e.g., proved) mathematical proposition corresponds to a contingent proposition with sense insofar as both are syntactically well-constructed: the mathematical proposition, *because of its syntactical form*, has a position in a syntactical calculus; the contingent proposition, because of *its* syntactical form, has sense and can be used to assert that a possible state of affairs or fact obtains. A ‘false’ (i.e., refuted) “mathematical proposition” corresponds to a nonsensical, contingent pseudo-proposition inasmuch as both are syntactically ill-constructed: the refuted mathematical proposition, *because of its syntactical form*, does not have a position in any existent syntactical calculus; the nonsensical pseudo-proposition, because of *its* syntactical form, does not have sense and cannot be used to make an assertion. Thus, just as contingent sense depends on “syntactical correctness”, mathematical sense similarly depends upon “syntactical correctness”: If a mathematical proposition has sense it is part of a mathematical calculus (i.e., as an ‘axiom’ or a proved proposition) because of its syntactical form – if a mathematical proposition does not have sense, it is not part of a mathematical calculus because of its syntactical form. In

the mathematical case, bad or incorrect syntax means that a Csign – whether a refuted mathematical proposition, an ill-formed Csign (e.g., “ $2 + = 2 = 4$ ”), or a syntactically independent Csign – is not a mathematical proposition with mathematical sense and a syntactical location in a mathematical calculus. What we call ‘truth’ and ‘falsity’ in mathematics is just as much a matter of syntax as sense and nonsense in the realm of contingent propositions. If we recognize this, it should not be disconcerting that even refuted mathematical *propositions*, such as “ $37 + 63 = 101$ ”, do not have mathematical sense, since they simply are not components, with syntactical connections to other propositions, of syntactical mathematical structures. Seen in this light, WV₂S’s claim (C₂) that the sense of a refuted mathematical proposition is its syntactical *conflict* with a proved proposition in a mathematical calculus has no substance, and flies in the face of Wittgenstein’s structuralism, since such a proposition has no syntactical connections with propositions *in* the calculus.

Although WV₁S has the non-standard consequence that undecided and refuted mathematical propositions do *not* have mathematical sense, it has the decided merit of agreeing with *Wittgenstein’s* (intermediate) view that “one cannot discover any connection between parts of mathematics or logic that was already there without one knowing” (PG 481), which Wittgenstein clearly maintains in the later period, saying, e.g., that “the proof... makes new connexions”, “[i]t does not establish that they are there”, for “they do not exist until it makes them” (RFM III, §31). In proving a proposition in a mathematical calculus, one makes or constructs new syntactical connections; given that the sense of a mathematical proposition consists in these very connections, a mathematical proposition cannot have sense until we have constructed these connections.

A proof is a proof of a particular proposition if it goes by a rule correlating the proposition to the proof. That is, the proposition must belong to a system of propositions, and the proof to a system of proofs. And *every proposition in mathematics must belong to a calculus of mathematics.* (PG 376; italics mine)

This, then, is Wittgenstein’s account of mathematical sense. It is, I believe, the most coherent interpretation of Wittgenstein’s numerous and lengthy remarks on mathematical invention, construction, proof, decidability and,

most importantly, sense. The question, of course, is whether this radical conception is plausible and defensible.

Superficially, at least, the answer seems to be a quick ‘No,’ for WV_1S seems to have the revisionist consequence that Csigns that we ordinarily take to be (meaningful) mathematical propositions, such as GC, are *not* mathematical propositions, given that they are not algorithmically decidable. This seems especially problematic and revisionistic, for if GC is not a mathematical proposition, what good (mathematical) reason could we have to even attempt to decide GC relative to any mathematical calculus?

The apparent revisionism, however, is more a matter of how we talk than a matter of Wittgenstein prohibiting certain mathematical activities. To see this, suppose, e.g., that a mathematician tackles GC because s/he wants to determine whether or not it can be proved using only the axioms and rules of PA. Does Wittgenstein’s conception prohibit such an attempt? Wittgenstein explicitly says that it does *not*.

I do not claim that it is wrong or illegitimate if anyone concerns himself with Fermat's Last Theorem. Not at all! If e.g. I have a method for looking integers [sic] that satisfy the equation $x^2 + y^2 = z^2$, then the formula $x^n + y^n = z^n$ may stimulate me. I may let a formula stimulate me. Thus I shall say, Here there is a *stimulus* – but not a *question*. Mathematical ‘problems’ are always such stimuli. (*WVC* 144)¹⁷

The fact that, according to WV_1S , GC is not a mathematical proposition of PA does not, in itself, prohibit us from using PA to decide GC. If a mathematician succeeds in proving GC using only the axioms and rules of PA, the received view says that s/he has proved GC *in* PA, whereas Wittgenstein claims that s/he has created a new, extended calculus, PA_2 , in which GC (or, more accurately, a proved inductive base and a proved inductive step) is a proved proposition (propositions) with sense. On both views, a mathematician successfully proves a Csign using only the axioms and rules of PA – the only difference, and it is important, is that on Wittgenstein’s view, the Csign (GC) was not a proposition of PA before or after the proof.

More generally, on Wittgenstein’s account (WV_1S), the mathematician can decide algorithmically decidable mathematical propositions and s/he can still endeavour to decide Csigns that are not algorithmically decidable. In the latter case, s/he may or may not be successful, and if s/he is success-

ful, s/he may extend a mathematical calculus by adding a newly proved Csign to a calculus, thereby creating a new mathematical calculus. In the former case, s/he will determine whether a mathematical proposition is part of an extended calculus and, typically, even if s/he refutes a mathematical proposition, s/he will add a newly proved mathematical proposition to a newly created (i.e., extended) mathematical calculus. In both cases, the mathematician can decide Csigns and, in some cases, extend an existent calculus (i.e., *create* a new, extended calculus) in exactly the ways that mathematicians in fact decide ‘propositions’ and extend calculi. What seems like revisionism is, therefore, really only a difference in terminology,¹⁸ for a mathematician has no less reason to try to prove GC using only the axioms and rules of PA.

The real, substantive difference between WV₁S and the received view of mathematics is that, according to WV₁S, we do not *pretend* that any and all ‘well-formed’ Csigns (i.e., so-called ‘wffs’) are mathematical propositions with determinate senses and truth-values and we don’t pretend that we can stipulate well-formedness for the ‘propositions’ of undecidable mathematical calculi. For example, GC is a well-formed formula of PA, but, even on the standard account, we simply do not know whether or not it will be proved independent of PA. If GC is one day proved independent of PA, this will only clarify the delusion that we are able to stipulate rules for well-formedness for mathematical calculi that lack an applicable and effective decision procedure. Gödel’s First Incompleteness Theorem should already have taught us this – for Gödel has constructed a procedure by which we can generate *wffs* of PA which are syntactically independent of PA if PA is consistent – but, instead, the significance of Gödel’s First Incompleteness Theorem supposedly lies in a demonstration that mathematical truth and proof are distinct.

What seduces us into thinking that GC *is* a mathematical proposition with a fully determinate sense is a “faulty analogy” between mathematical and contingent propositions. According to this seductive analogy, just as contingent/empirical propositions are about *existent* objects or phenomena, all mathematical propositions are *about* existent (or possible) mathematical objects, and so, just as the former have determinate sense because they assert that some or all objects of kind A have property B, mathematical propositions similarly assert that some or all mathematical objects of kind A have property B. On this, the received view, a mathematical proposition such as GC, which says that all objects of kind A (i.e., all even numbers

greater than 2) have property B (i.e., are the sums of two primes), has a determinate sense simply because it ascribes a property to existent (or possible) objects. Even though GC is undecided and we do not know how to decide it, GC has a completely determinate sense which we *completely* understand, because “it says” that every even number greater than 2 *is* the sum of two primes and we know what the words ‘every,’ ‘even’ and ‘prime’ mean in mathematics.¹⁹ We believe that we can envisage infinitely many even numbers each of which is the sum of two primes; *that*, we say, *is* GC’s sense (or meaning), whether or not it *turns out* to be true or false (indeed, whether or not we ever decide it).

According to Wittgenstein, however, this picture of mathematical sense is entirely mistaken because it rests on a misleading analogy between (genuine) propositions and so-called mathematical propositions (PG 370-71), which engenders the “false picture” (PG 290) that mathematical propositions have a ‘sense’ and/or are ‘*about*’ something. Just as he says in the *Tractatus* that “[o]ne can understand [a proposition]... without knowing whether it is true” (4.024), Wittgenstein says at (PG 370-71) that “the discovery that a particular [truth determination] hypothesis [i.e., “the quantity of haemoglobin in the blood... diminishes according to such and such a law in proportion to the time after death”] is true (or: agrees with the facts)” ‘does not change anything in the grammar of the proposition “the man died two hours ago”.’ One can understand “the man died two hours ago” *completely* without knowing whether it is true because, given our linguistic conventions, this sentence has a fully determinate sense which we can understand, picture, etc. Moreover, we can *describe* the aforementioned “possible method” of “ascertaining the time of death”, we can “ascertain[] experimentally... whether the description corresponds to the facts”, and, if it does, we can thereby ‘medically’ *prove* that the man died two hours ago, without “incorporat[ing] the hypothesis... proved into any new calculus” and so without “giv[ing] it any new sense” (PG 371). However, unlike the description of the hypothesized time-of-death-determination method, “the mathematical proof couldn’t be described before it is discovered”, which shows that we are mistaken to “take the discovery of a proof in mathematics, sight unseen, as being the same or similar” to such a “medical proof” (PG 371). In the case of an undecided mathematical proposition, such as GC, the ‘proposition’ does not have a sense because we cannot picture or describe what is the case if it is true (i.e., we cannot picture or describe GC’s truth-conditions) and we cannot picture or describe what would be the case if it

were proved (i.e., we cannot picture or describe GC's proof-conditions in the absence of a proof). We erroneously think we fully *understand* GC because we erroneously think that this type of 'proposition' is on a par with a proposition about reality. According to Wittgenstein, we can escape the trap of this misleading analogy only if we recognize that *understanding* a mathematical proposition is not possible independent of a calculus and a proof, for mathematical understanding is inextricably linked to a proposition's *having* mathematical sense, which requires that it is *already* proved.

6. Mathematical Sense and Mathematical Understanding

From 1929 through 1944, Wittgenstein makes this point – that mathematical proof, sense, and understanding are inextricably connected – in myriad different (and interesting) ways. Contra the naïve view of GC whereby we can fully understand its sense in its English (i.e., natural language) expression, Wittgenstein says (*PR* §162) that “[a] mathematical proposition – unlike a genuine proposition – is *essentially* the last link in a demonstration that renders it visibly right or wrong.”²⁰ We cannot understand GC until it has a sense, and it does not have a sense until we have given it a sense by proving it in a calculus. Since nothing exists in mathematics unless and until it is *constructed*, a proof does not discover a pre-existing mathematical fact, which means that “when I learn the proof [“that there are infinitely many primes”], I learn something *completely new*, and not just the way leading to a goal with which I'm already familiar” (*PR* §155).²¹ Only when we have constructed a proof does the proof of a proposition exist, and only then does the proposition have a mathematical sense because only then does it have a connected syntactical place in a syntactical structure.

Only within [“an extended technique of calculating with cardinal numbers”] does this proposition [“there are infinitely prime numbers”] *have sense* [italics mine]. A proof of the proposition locates it in the whole system of calculations.

...

The proof of a proposition certainly does not mention, certainly does not describe, the whole system of calculation that stands behind the proposition *and gives it its sense*” (italics mine). (*RFM* VI, §11)²²

In what remains of this paper, I will briefly present one of the many ways in which the middle and later Wittgenstein connects *understanding* a mathematical proposition and the sense of a mathematical proposition and I will consider how Wittgenstein does and would respond to standard objections to his conception of mathematical sense.

In 1929, when Wittgenstein writes (*PR* §155; MS 108, 13) that “when I learn the proof [“that there are infinitely many primes”], I learn something *completely new*”, he also writes (MS 105, 57-59) that “the real mathematical proposition is a proof of a so-called mathematical proposition” and that “[t]he real mathematical proposition is the proof: that is to say, the thing which shows how matters stand” (*PR*, p. 184, Ft. #1). Similarly, 12 years later, at (*RFM* VII, §§10, 11), Wittgenstein asks: “[O]ught I to say... that when a proof is found the sense alters?” Wittgenstein immediately rejoins, on behalf of the received view, that such a view is absurd, for it follows that “the proof of a proposition cannot ever be found, for, if it has been found, it is no longer the proof of *this* proposition”.²³ “But”, replies Wittgenstein, “to say this is so far to say nothing at all”, for what exactly is *this* proposition? One only finds his viewpoint strange, Wittgenstein thinks, because one assumes that one has everything one can possibly have in terms of a proposition when one has the undecided proposition, but what we actually see is that a proof extends a calculus and makes new connections that did not previously exist (and with which we can *only now* work). “[T]he proof belongs to the *sense* of the proved proposition, i.e. determines that sense”, Wittgenstein argues (*PG* 375), “[i]t isn’t something that brings it about that we believe a particular proposition, but something that shows us *what* we believe – if we can talk of believing here at all.”

Wittgenstein repeatedly contrasts mathematical sense and mathematical understanding with our ability to understand a contingent proposition at first sight and without knowing its truth-value. In the *Tractatus*, Wittgenstein asserts that “[a] proposition is a picture of reality”, “for if I understand a proposition, I know the situation that it represents” – “[t]o understand a proposition means to know what is the case if it is true” (4.024). One can understand a proposition that one has never seen or heard by knowing its object names and their respective *Bedeutung* and knowing the conventional linguistic rules for ‘composing’ propositions out of names. Ultimately, though, one *understands by representing* in one’s mind – by, e.g., ‘*thinking*’ (*Tractatus* 3.11) – a possible state of affairs or fact. Wittgenstein *contrasts* this conception of understanding a contingent proposition with understand-

ing a so-called “mathematical proposition”, which, he argues, we *cannot* understand or picture in advance of its proof (or decision).

In 1944, the later Wittgenstein continues this investigation.

Would one say that someone understood the proposition ‘ $563 + 437 = 1000$ ’ if he did not know how it can be proved? Can one deny that it is a sign of understanding a proposition, if a man knows how it could be proved?

The problem of finding a mathematical decision of a theorem might with some justice be called *the problem of giving mathematical sense to a formula*. (RFM V, §42; italics mine)

Just before this passage in MS 127, Wittgenstein writes (MS 127, 161; March 4, 1944): “If the Fermat proposition were proved to me, I would then understand it better afterwards than before.” A little later, Wittgenstein rhetorically asks (MS 127, 171-172): “Don’t I understand the Fundamental Theorem of Algebra better if I can prove it than if I cannot prove it? How can it be that the proof does not contribute to my understanding, since it surely shows for the first time where this proposition is at home?”

At (RFM VI, §13), Wittgenstein again attacks his position with the received view of understanding the sense of an undecided mathematical proposition. His interlocutor asks: “Now isn’t it absurd to say that one doesn’t understand the sense of Fermat’s last theorem?” – “Don’t [the mathematicians] *understand* it just as completely as one can possibly understand it?” “But”, Wittgenstein rejoins, “if I am to know what a proposition like Fermat’s last theorem says, must I not know what the criterion is, for the proposition to be true?” “I am of course acquainted with criteria for the truth of *similar* propositions”, he adds, “but not with any criterion of truth of this proposition.” Wittgenstein’s point is that, although we are familiar with criteria of truth/*proof* for similar propositions, unless and until Fermat’s Last Theorem is proved, we do not know (and we cannot describe) *its unique* truth/*proof*-conditions (i.e., what proof proves it ‘true’). When Fermat’s Last Theorem is *proved*, something new is created – syntactical connections are established with other parts of the calculus – and only then do we fully understand the sense of Fermat’s Last Theorem, because only then does Fermat’s Last Theorem *have* a determinate sense. Indeed, only when a proposition is proved *is it* a ‘machine-part’ with ‘connexions’ to other

proved machine-parts (i.e., propositions) of the machine (calculus) (*RFM* VI, §13).

The categorical difference between truth-conditions for contingent propositions and so-called truth (or proof) conditions for mathematical propositions is fundamental here. We cannot picture or imagine (or believe) the *mathematical sense* of a mathematical conjecture such as GC unless and until it is proved because it is not a genuine, *referential* proposition – we cannot picture GC’s sense (or meaning) because GC, like all mathematical propositions, is not about a realm of entities and, therefore, its truth-conditions are, more precisely, *proof-conditions*. The sense of a contingent proposition can be understood without knowing its truth-value, simply because one can know precisely what would make it true (i.e., its truth-conditions) without knowing *if* it is true; the sense of a mathematical proposition *cannot* be understood without knowing its “truth-value”, simply because one *cannot* know *precisely* what would make it true (proved) without knowing whether *and how* it is true (proved).

Wittgenstein makes the same point in terms of the *use* of a mathematical proposition. In connection with the “issue whether an existence-proof which is not a construction is a real proof of existence” (*RFM* V, §46), ‘the question arises: Do I *understand* the proposition “There is...” when I have no possibility of finding where it exists?’ Wittgenstein answers that “in so far as what I can do with the proposition is the criterion of understanding it, thus far it is not clear *in advance* whether and to what extent I understand it.” Here Wittgenstein alludes to his life-long methodological principle, first articulated at *Tractatus* 6.211: “In philosophy the question, ‘What do we actually use this word or this proposition for?’ repeatedly leads to valuable insights.” If you want to understand an expression or proposition, or if you want to know what an expression or proposition *means*, ask *how* (or determine how) it is *used*. Not only is it “a sign of understanding a [mathematical] proposition... if [one] knows how it could be proved” and a sign of no understanding “if [one does] not know how it can be proved”, if *no one* knows how to use a mathematical proposition (or whether it can be used), that is a decisive sign that it does not have a determinate sense. “Let the use of words teach you their meaning [‘Bedeutung’]”, Wittgenstein says as late as 1949 (MS 144, pp. 91-94; *PI*, 2001 Edition, p. 187e); “[s]imilarly one can often say in mathematics: let the *proof* teach you *what* was being proved.”

7. Infinitistic Mathematical Conjectures

Though Wittgenstein wishes to destroy the misleading analogy between (genuine) propositions and so-called mathematical propositions (*PG* 370-71), he does grant that the analogy is strongest when the mathematical proposition in question is finitistically restricted, as, e.g., if we assert $GC_{1,000,000}$ (i.e., “All even numbers greater than 2 and less than or equal to 1,000,000 are the sums of two primes”), for in this case we know how to algorithmically decide $GC_{1,000,000}$. Even in the finite case, however, the analogy nevertheless breaks down, Wittgenstein argues, because in deciding $GC_{1,000,000}$ we may give it a sense that it didn’t have before it was decided (i.e., if we prove it). Where, however, the analogy is truly dangerous and misleading is in the infinite case, where we might contrast, “There are infinitely many chairs” with “There are infinitely many prime numbers.” As Wittgenstein says:

If you tried to say ‘There are infinitely many chairs’ in the way in which you can say ‘There are infinitely many prime numbers,’ then your statement would not be false; it would be senseless. For there is no way of verifying this statement. (*WVC* 227-228)

We simply cannot establish the truth of “There are infinitely many chairs”, though we can empirically establish the truth of “There are n chairs” for an arbitrarily large n . Much to the contrary, we *can* establish the ‘truth’ of “There are infinitely many prime numbers” (by mathematical induction, in Wittgenstein’s restricted, constructive sense²⁴), but as with physical objects such as chairs, we cannot do this empirically. Thus, on Wittgenstein’s view, if we abandon the explanatorily useless idea of a world (or domain) of, e.g., infinitely many natural numbers, we are *forced* to grant that the so-called truth of, say, GC *resides in a proof*, not in infinitely many even numbers *having* a particular property. The sense or meaning of GC , therefore, is not comparable to an empirical proposition that ascribes a property to one or more existent objects – it only has sense if and when it is proved (constructed) by a constructed proof.

8. Conclusion

Put still differently, Wittgenstein's main criticism of the received view on mathematical sense is that *when* the sense of an infinitistic mathematical conjecture, such as GC, is understood, we do *not* come to know the individual senses of infinitely many conjuncts, such as "8 is the sum of 5 and 3" and "10 is the sum of 7 and 3" and "12 is the sum of 7 and 5", etc., as we *can* when we decide $GC_{1,000,000}$. If we come to *know* that GC is 'true,' we won't come to *know*, for each even number (of infinitely many), which two primes sum to it – we will come to *know*, as with Euclid's Prime Number Theorem, *why* every even number greater than 2 *must* be the sum of two primes, for we will see, *by way of a proof*, the syntactical connections that ensure this so-called 'necessity,' because they *constitute* a particular structure.²⁵ Only with a proof can we understand *why and in what exact sense* a proposition is 'true' because we see, syntactically, why the syntactical sense of the proposition is so – i.e., we see in a proof of GC *why* or *how* each *constructible* even number greater than two is or must be the sum of two primes – we see *how* we can construct, without limit or exception, even numbers that are the sums of two primes.

In sum, the sense of a mathematical proposition does not exist until it is knowingly constructed by a proof, which is why the unnecessary concept of "mathematical truth" is, unlike its contingent counterpart, *not* distinct from meaning, understanding, and construction. We simply cannot understand a mathematical proposition, which *does not* have a determinate sense/meaning, unless and until it is proved. This deviant conclusion is not so bizarre if we, following Wittgenstein, *reject mathematical possibility as actuality or a type of reality*.²⁶

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Notes

1. This reasoning *must* have it that we similarly understand Fermat’s Last Theorem, even though there are very few people in the world that understand Andrew Wiles’ proof. In his (1973) account of Intuitionistic mathematics, “which leans heavily upon Wittgensteinian ideas about language” (226) and in which “use exhaustively determines meaning” (pp. 218, 220, 223), Michael Dummett says (p. 225) that “a grasp of the meaning of a [mathematical] statement consists in a capacity to recognise a proof of it when one is presented to us.” As we will see in Sections 5-8, however, Wittgenstein’s position is perhaps stricter than Dummett’s account. An examination of the similarities and differences between Wittgenstein’s position and Dummett’s, however, is beyond the scope of the present paper.
2. Indeed, for Wittgenstein (PG 290), “mathematics is a calculus and hence isn’t really *about* anything.” Cf. (PR §§109, 157, 159), (WVC 106), (PG 333, 468), and (PG 468): “In mathematics *everything* is algorithm and *nothing* is meaning [‘Bedeutung’].”
3. For the details of my interpretation of Wittgenstein’s Philosophy of Mathematics, see (Rodych 1997, 1999a, 1999b, 2000a, 2000b, 2002, 2003, 2006, 2007). For different approaches to the problem of Wittgenstein on mathematical sense, see (Ambrose 1982) and (Frascolla 2004). I would like to thank Mathieu Marion and Michael Potter for kindly sending me copies of (Marion 2006) and (Potter 2006), respectively.
4. On the ontological side, Wittgenstein says, most fundamentally, that “[t]he world is all that is the case” (1) and that the world is “[t]he totality of existing states of affairs” (2.04). Given that “[a] state of affairs... is a combination of [‘simple,’ ‘unalterable’ (2.02; 2.023; 2.2027] objects (things)” (2.01) and given that “a fact-is the existence of [two or more] states of affairs” (2), it follows that “[t]he world is the totality of facts” (1.1).
5. On the propositional side, a proposition “is a picture of reality” (4.01; 4.021; 4.032), “[w]hat a picture represents is its sense” (2.221), and “[a] proposition can be true or false only in virtue of being a picture of reality” (4.06). According to Wittgenstein, both representational drawings and linguistic representations are pictures in that both have a requisite *structural* aspect *and* a requisite *intensional* aspect: to represent a possible state of affairs or a possible fact, a picture must be *intended* to represent that possible state of affairs or possible fact *and* it must be isomorphic with that possible state of affairs or possible fact. As Wittgenstein says, “[w]e picture [possible] facts to ourselves” (2.1) – “‘A state of affairs is thinkable’... means... that we can picture it to ourselves” (3.001) – and “[w]e use the perceptible sign of a proposition (spoken or written, etc.) as a projection of a possible situation”, wherein “[t]he method of projection is to *think* of the sense of the proposition” (3.11; *italics mine*). Thus, the *sense* of a proposition is a *possible* state of affairs or fact (4.031), which one can picture (or think or project) mentally/cognitively. Though the later Wittgenstein’s was reluctant to discuss the ontological status of thinking

(and mental states and events in general), if this picturing or thinking is a brain event, this is perfectly compatible with the monism-physicalism of the *Tractatus*.

6. Mathematical pseudo-propositions *do not have sense*, which we can picture, think, or project, and hence, they cannot be true or false by agreeing or failing to agree with an existent state of affairs or fact in the world. See (*AWL* 197) on *imagining* a mathematical proposition and (*LFM* 123) and (*RFM* I, §§106-112) on *believing* a mathematical proposition.
7. See also (4.05): “Reality is compared with propositions.”
8. See also (*LWL* 1): “Language consists of propositions (excluding for the moment so-called mathematical propositions). A proposition is a picture of reality, and we compare proposition [sic] with reality.” Cf. (*LWL* 2).
9. See also (*PR* §154): “What a mathematical proposition says is always what its proof proves”; “it never says more than its proof proves.” Cf. (*PR* §163): “If we want to see what has been proved, we ought to look at nothing but the proof”; and (*PG* 369).
10. In the (*PG* 458-459) passage (from MS 113, May 23, 1932), Wittgenstein rewords the (*PR* §166) passage (MS 107, Sept. 11, 1929) and more weakly states that “[t]he verification [of a mathematical proposition]... *determines* the sense of the proposition.”
11. Cf. (*PR* §153): “Understanding *p* means understanding its system. If *p* appears to go over from one system into another, then *p* has, in reality, changed its sense.” (*PG* 378) is almost identical.
12. A better translation of this passage would use “has a sense” rather than “made sense.” See Note #14, below. (*PR* §148) is perhaps the most illuminatingly ruminative passage in *PR*, revealing the tensions in Wittgenstein’s evolving thoughts. Cf.: “If there is no method provided for deciding whether the proposition is true or false, then it is pointless, and that means senseless” (*PG* 451); “[W]hat *would* mean nothing would be to say that I can only assert [“a mathematical proposition”] if it’s correct” (*PR* §150). See also (*PR* §202). Indeed, in this connection, the middle Wittgenstein speaks of “mathematical truth” and “mathematical falsehood”: “For, in a very important sense, every significant proposition must teach us through its sense how we are to convince ourselves whether it is true or false” ((*PR* §148); cf. (*PG* 366)), whereas the later Wittgenstein (like the early Wittgenstein of the *Tractatus*) usually speaks only of ‘correct’, ‘incorrect’ and ‘proved’ mathematical propositions.
13. The later Wittgenstein similarly says that the sense of a mathematical proposition is a ‘position’ (*RFM* VI, §11) or its ‘place’ (*RFM* VII, §10) as a “machine-part” with “connexions” in a machine-calculus (*RFM* VI, §13)). See also (*RFM* III, §§27, 29).
14. It should be noted that translations in *PR* and *PG* frequently have “made sense” or “make sense” when literal and better translations would be “had sense” and “have sense”, which also agree with Wittgenstein’s use of (mathematical) ‘sense’ as a technical term. See, e.g., (*PR* §148, par. 3; §150, par. 15; §153, par. 3). I would like to thank Dr. Tim Pope (University of Lethbridge) for the translations contained herein. Any errors in the translations are entirely my responsibility.
15. Cf. (Marion 1998, 173): “For Wittgenstein, proof not only is the truth-maker, it is, so to speak, the meaning-maker.”

16. It seems that Wang (1991, 253, 256) finally arrived at this interpretation of Wittgenstein's Philosophy of Mathematics, as referenced in my (1999a). See also (Dummett 1994, 50, 56, 63-64) and, reviewing (Frascolla 1994), (Dummett 1997, 363, 366, 369).
17. Cf. (*PG* 371): "(Unproved mathematical propositions [Csigns] – signposts for mathematical investigation, stimuli to mathematical constructions.)"
18. See (Rodych 2000b), especially pp. 258-267, for Wittgenstein's views on mathematical induction, unsystematic proof searches, and extensions of calculi.
19. Cf. (*PG* 375).
20. Wittgenstein says (*PR* §155) that "it isn't the prose which is the mathematical proposition, it's the exact expression", the sequence of signs and its syntactical relations to other propositions in its calculus. (*PG* 369-370): "If you want to know what the expression "continuity of a function" means, look at the proof of continuity; that will show what it proves."
21. "[W]e don't discover a proposition like the fundamental theorem of algebra,... we merely construct it..., [b]ecause in proving it we give it a new sense that it didn't have before" (*PG* 374). Cf. (*RFM* VI, §11).
22. The first sentence has been re-translated by Dr. Tim Pope, with the principle difference being that "makes sense" is here replaced by "have sense." Cf. (*RFM* III, §25): "A psychological disadvantage of proofs that construct *propositions* is that they easily make us forget that the *sense* of the result is not to be read off from this by itself, but from the *proof*. In this respect the intrusion of the Russellian symbolism into the proofs has done a great deal of harm."
23. Cf. (*PR* §155): "But in that case it's unintelligible that I should admit, when I've got the proof, that it's a proof of precisely *this* proposition, or of the induction meant by this proposition."
24. See (Rodych 2000b).
25. Just as we came to see in (one variant of) Euclid's Theorem, *not* the infinite distribution of the primes, but that there cannot be a greatest prime number, since for any prime n , there must be a greater prime in the interval $[n + 2, n! + 1]$.
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Santayana and Wittgenstein on Scepticism

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Apart from the attempt to understand the world, philosophy has other functions to fulfil. It can enlarge the imagination by the construction of a cosmic epic, or it can suggest a way of life less wayward and accidental than that of the unreflective. A philosopher who attempts either of these tasks must be judged by a standard of values, aesthetic or ethical, rather than by intellectual correctness.

Bertrand Russell, "The Philosophy of Santayana", p. 453.

I. Introduction

At first sight, the attempt to compare the philosophical positions of George Santayana (1863-1952) and Ludwig Wittgenstein (1889-1951) could be deemed as somewhat bizarre or extravagant. As has been pointed out,¹ both philosophers belong to such different philosophical traditions with such divergent methods, aims, styles and sensibilities that they seem "improbable candidates for comparative study". Furthermore, if it is true that "philosophical fashions and reputations tend to fade once a thinker has died",² this is especially clear in Santayana's case. In this respect, Santayana's highly personal and literary style of writing has not been very helpful – even today there is a tendency to see him as a literary, rather than a philosophical figure – nor has his rather disdainful lack of interest in the core methodological questions that were at the origins of the contemporary philosophical movements whose birth and development he witnessed. This set of circumstances helps, in some way, to explain the situation in the philosophical literature: in the last 60 years or so, scholars of Santayana and Wittgenstein seem, as a rule, to have ignored each other. Of course, all rules have exceptions, and a

few may be quoted in this respect. For example, in his book *The Claim of Reason*, Stanley Cavell mentions in passing that Wittgenstein shares with Santayana (as well as with existentialists) a “sense of the precariousness and arbitrariness of existence”, a “knowledge of the depth of contingency”.³ More recently, Michael Hodges and John Lachs published the only book (as far as I know) [Hodges and Lachs (2000)] that focuses on the relationships between the philosophies of Wittgenstein and Santayana. *Thinking in the Ruins* is, without a doubt, a good and daring book. In spite of the obvious dissimilarities, the comparison between Santayana and Wittgenstein that Hodges and Lachs undertake undeniably has a point. Both philosophers have much more in *common* than Cavell’s fleeting remark suggests. They were *contemporaries* whose acquaintances⁴ and pathways crisscrossed several times, although it seems that they never met personally. The amazing similarities between the two figures range from personal biographies to philosophical goals, not to mention their political conservatism, their standards of “decency” (Wittgenstein)/ “honesty” (Santayana), or their shared contempt towards professional philosophers.⁵ Valuable as they are, however, I think that Hodges and Lachs’ pioneering insights need to be taken even further and in other directions. My contribution will focus on the ways in which Santayana and Wittgenstein treat scepticism. It is not only the relevance of the topic which has determined my choice; I think – and I hope to demonstrate as such in this paper – that the comparison can have a philosophical, and not merely a historical point.

It is well known that the problem of scepticism attracted Wittgenstein’s attention during a very early period of his philosophical career and there are good reasons for supposing that this happened under the influence of Tolstoy’s *My Confession*.⁶ Near the end of the *Tractatus*, scepticism is mentioned alongside “The riddle” (6.5), the impotence of science both vis á vis the most important human problems (6.52), and the “proper” status of “the problem of life” (6.21). Wittgenstein declares therein – in what seems to be an attempt at stopping scepticism from the cradle – that “Scepticism is *not* irrefutable, but obviously nonsensical” (6.51). After this brief indictment, Wittgenstein did not *apparently* pay any further attention to the topic and the question presumably remained in dry dock until his famous visit to Malcolm in Cornell in 1949⁷. While there, Wittgenstein intensively discussed several issues concerning scepticism with Malcolm and, on his return to Europe, started to write down his ruminations on scepticism, on the nature and the status of our basic beliefs, etc. He was to keep writing on these top-

ics until the eve of his death. The bulk of these writings is what we know today as *On Certainty* [Wittgenstein (1969)].

Santayana's interest in scepticism, on the other hand, may be traced back to his work *The Life of Reason; or the Phases of Human Progress* [Santayana (1905-1906)]. This monumental work in five volumes is an attempt to map out a kind of naturalistic "biography of the human mind", in which *scepticism* is only one of its main topics. Nearly twenty years later, however, Santayana decided to recast his whole philosophical system. To that end, he set about the task of substituting the introspective psychology of his earlier writings by a set of ontological distinctions (the "realms" of being). The first step was accomplished in a book entitled *Scepticism and Animal Faith* [Santayana (1923)]. The comments I shall make here concerning Santayana's treatment of scepticism rely basically on this work.

II. A Thought-Experiment

The first part of *Scepticism and Animal Faith* takes the form of a thought-experiment⁸. After some preliminary remarks, Santayana asks: Why do people embark on an activity such as criticism? He thinks that critical activity is the result of an *accident* in human history, an accident due to many unhappy experiences of perplexity and error. His account is mainly of a genetic kind. When people's attention is attracted to some remarkable thing, for example the rainbow, they do not examine this event from different points of view "but all the casual resources of fancy are called forth in conceiving it, and this total reaction of the mind precipitates a dogma; the rainbow is taken for an omen, or for a trace left in the sky by the passage of some beautiful and elusive goddess" [Santayana (1923) p. 6]. However, the same perception that has given birth to a dogma today may give birth to a different one tomorrow. Of course, it is not *logically* impossible to conceive a world in which different dogmas could peacefully co-exist. In the realm of dogmas, however, there is also a kind of "struggle for life". "In the jungle", says Santayana, "one tree strangles another, and luxuriance itself is murderous. So is luxuriance in the human mind. What kills spontaneous fictions, what recalls the impassioned fancy from its improvisation, is the angry voice of some contrary fancy. [...] Criticism arises *out of the conflict* of dogmas" [*ibid.*]; and a clash between dogmas is only a clash between beliefs. For belief, the most ordinary belief, is always a dogma.

As can be expected, two different groups of “supporters” can always be found for each two different dogmas in conflict (in fact people do ferociously *disagree* on a number of very important things), and the emergence of a kind of “method” for establishing what *ought* to be believed cannot be surprising. Scepticism thus appears as a sort of *dissatisfaction* with any method whatsoever for evaluating beliefs. From the outset, Santayana admits “the brute necessity of believing something as life lasts”. Nevertheless, he is fully conscious that this fact does not license a *hasty dismissal* of scepticism. He therefore undertakes a kind of “thought-experiment” in which he concedes from the very beginning that sceptics should be allowed to doubt everything they can in order to discover whether they have any beliefs that are altogether beyond doubt. Here are his own words: “let me then push scepticism *as far as I logically can*, and endeavour to clear my mind of illusion, even at the price of intellectual suicide” [Santayana (1923) p. 10, my italics]. Furthermore, Santayana, as opposed to Wittgenstein, is apparently unconcerned with the *meanings* of the expressions used to state sceptical doubts. He acknowledges from the very outset that the sceptic has the *right* to present his case, *provided that he proceeds honestly*. (We shall see later what Santayana means by “honestly”.)

Santayana’s testing of the sceptic’s case passes through several stages. Religious beliefs, legends and histories are easy preys to criticism. What Santayana calls “romantic solipsism” “in which the self making up the universe is a moral person endowed with memory and vanity” [Santayana (1923), p. 13] is the next catch. His rejection of this kind of solipsism is not based on its being *unthinkable* or *self-contradictory*. Santayana thinks of it as “an interesting state of mind” indeed: in such a state “all the complementary objects that might be requisite to give point and body to the idea of oneself, *might* be only ideas and not facts; and a solitary deity imagining a world or remembering his own past constitutes a perfectly conceivable universe” [*ibid.*]. However, his main reason for putting it aside is that romantic solipsism is a *dishonest* stance. The romantic solipsist claims to have reached the top-end of the experiment, when what he is in fact doing is *arbitrarily* stopping at one stage in the journey of testing his beliefs for certainty. The romantic solipsist thinks of himself as having had certain experiences in a certain order. Santayana’s retort is that one cannot conceive how one being without beliefs in the physical world could be able to check the general reliability of his memory and, therefore, how he could trust any past memories without making *a leap in the dark*. It is important here to note

that Santayana is not putting forward this argument as a *killing* objection against romantic solipsism; his point only seems to be that the solipsist progress is not *enough*, that there can be an *additional* stage in which he can reach a *greater* rational security. If this is so, the romantic solipsist has no *right* to entertain the beliefs he is claiming to have without being thereby committed to an unjustified form of dogmatism. If this is so, the beliefs of the romantic solipsist need to be further strained “through the utmost rigours of scepticism” [Santayana (1923), p. 9] and the thought-experiment must proceed further.

In the *final* stage of the thought-experiment, the *protagonist* is the “solipsist of the present moment” (an expression coined by Santayana, by the way). Such a solipsist should regard as “gratuitous dogmas” “the postulates on which empirical knowledge is based, namely, that there has been a past, that it was as it is now thought to be, that there will be a future and that it must, for some inconceivable reason, resemble the past and obey the same laws” [Santayana (1923), p. 14]. Santayana insists that this is the only *honest* stance for a true sceptic and dismisses as “misunderstandings” the attempts to present it as self-refuting. For example, one could argue that a mind that calls any moment the “present” moment virtually *transcends* it and posits a past and a future beyond it. Santayana replies, however, that such arguments confuse the *convictions of the solipsist* with those of a spectator who describes them from *outside*. A solipsist of this kind could, in principle, use other men’s language, but he *cannot* be committed to its implications. Such implications may render it very difficult for him to remember his solitude, but no more than “the figures of men and beasts, legends and Apocalypses” that can be part of his “vision”. The predicament of the solipsist of the present moment is psychologically *difficult* indeed, but not contradictory; after all, “it is hard for the greedy intellect to keep its cake without eating it” [Santayana (1923), p. 16]. Furthermore, this kind of solipsist is someone who becomes “an *incredulous* spectator of his own romance” [*ibid.*, p. 15, my italics]. “Incredulous” is here the right word indeed. The ideas that the solipsist of the present moment entertains have no *internal* qualities at all that could mark them as *pointing* to something outside themselves; they only turn into *beliefs* when “by precipitating tendencies to action they persuade me that they are *signs of things*; and these things are not ideas simply hypostatized, but are believed to be compacted of many parts, and full of ambushed powers entirely absent from ideas” [*ibid.*, p. 16, my italics]. The passage from ideas to beliefs is certainly

almost mechanical (“the belief”, says Santayana, “is imposed on me surreptitiously by a latent reaction of my body on the object producing the idea”) and that accounts for the difficulty of the true scepticism (“permitted only to the young philosopher, in his first intellectual despair” [*ibid.*, p. 34]). Everybody who is not a solipsist of the present moment *believes* some things for which he cannot offer proper rational support. However, Santayana claims that although this *latent reaction* can hardly be avoided, “it may be discounted in reflection, if a man has experience and the poise of a philosopher” [*ibid.*, p. 16].

A consequence of the above picture is that there cannot be *real* change for the true sceptic; he must content himself with the intuition of change, what he calls the *specious* change. Everything given intuitively is only an appearance. For a change to be real, its first term must have occurred “out the relation to the subsequent phases which had not yet arisen and only became manifest in the sequel: as the Old Testament, if really earlier than the New Testament, must have existed alone first, when it could not be called old. If it had existed only in the Christian Bible, under that perspective which renders and calls it old, it would be old only speciously, and all revelation would have been really simultaneous” [Santayana (1923), p. 25]. Now, belief in change cannot be a belief in specious change, but in *real* change. As has been pointed out, it is true that belief is almost irresistible in animal perception due to biological reasons and cannot be suspended for *long* in our current thinking. However, Santayana insists that it may be theoretically suspended for a *moment* in the interest of criticism.

Furthermore, the distinction between *subject* and *object* should suffer a similar fate in the hands of the true sceptic; the solipsist of the present moment cannot afford such a luxury either. “It might seem for a moment as if this pressing actuality of experience implied a relation between a subject and an object, so that an indescribable being called ego or self was given with and involved in any actual fact. This analysis, however, is merely *grammatical*, and if pressed issues in mythical notions” [Santayana (1923), p. 22, my italics]. Again, it could be psychologically difficult to dispense with an “I” or “ego”; but at this stage of the thought-experiment it is clear that the solipsist cannot be in the presence of anything except the *object itself*. For one thing: “Analysis can never find in the object what, by hypothesis is not there, and the object, by definition, is all that is found”. Of course, we could be prey here, Santayana warns us, of a *new* familiar misunderstanding: there is a “much later discovered biological truth”; namely,

that in order to perceive an object we need a subject, a subject that bears natural relations with the world surrounding it. However, this natural fact *cannot* by itself guarantee the logical necessity of deriving a metaphysical subject from the object itself. Now, if that subject cannot be found in the object, any attempt at postulating it, can only turn out to be a movement backwards towards the *insecurity* that the solipsist is trying to avoid.

The last step in this philosophical exercise is to *abolish* any existence. A true sceptic should by now be engaged only with the datum (“the whole of what solicits [his] attention at any moment”). According to Santayana, existence now *points* to something being in external relations to things outside it, and nothing in the datum itself points with *absolute security* to such external relations. Therefore, “belief in the existence of anything, including myself, is something incapable of proof, and resting, like all belief, on some irrational persuasion or prompting of life” [Santayana (1923), p. 35]. However, Santayana is ready to explain that the above declaration does *not* mean that things, including myself, do not exist: “Certainly”, he claims, “as a matter of fact, when I deny existence I exist; but doubtless many of the other facts I have been denying, because I found no evidence for them, were true also. *To bring me evidence of their existence is no duty imposed on facts, nor a habit of theirs: I must employ private detectives*” [*ibid.*]. The point here is that, according to Santayana, existence is essentially related to external relations. If something exists, then it should be in any kind whatsoever of external relations with something. Now, the solipsist of the present moment is unable to find that the datum, which attracts his attention at each moment, bears in an indubitable way any external relations with something else. Not even this extreme sceptic is able to find any certainty for what could appear to be the most real: his own experiencing of the datum. The only *criterion of certainty* left by now should be that of “presence” or “intuitive possession”. Such a criterion declares that anything not immediately before the mind is at risk, that we can trust only what we see. “Existence, then, not being included in any immediate datum, is a fact always open to doubt” [*SAF*, pp. 39-40].

It is at this point that the solipsist of the present moment reaches *absolute certainty*, because here he is no longer taking any risks. Perhaps for a moment he may fancy that he has found a realm of *indubitable facts*. However, Santayana is prompt to pour cold water on his hopes:

“Hence an important conclusion which at first seems paradoxical but which reflection will support; namely that the notion that the datum exists is unmeaning, and if insisted upon is false. That which exists is the *fact that the datum is given at that particular moment* [...] in the universe; the intuition, *not the datum*, is the fact that occurs, and this fact, if known at all, must be asserted at some other moment by an adventurous belief which may be true or false. That which *is certain and given*, on the contrary, is something of which existence *cannot* be predicated, and which, until it is used as a description of something else, cannot be either true or false” [Santayana (1923), p. 45].

Therefore, scepticism may be defeated only by *our being certain of what is directly present*. But inside the walls of certainty, the only thing we can do is to *stare* at the datum, so to speak, with wide open eyes. It is true that we cannot be wrong in what we “see”; however, the certainty that we get at the end of the day is empty. As Santayana has stated, the price paid by the sceptic is plain “intellectual suicide”. As long as we claim to get justified belief on the basis of the established criterion (“presence” or “intuitive possession”), we shall be defeated by the solipsist. If, on the contrary, we are prone to think that he is the loser, that the result of the thought-experiment is that we have discovered a set of self-guaranteeing truths absolutely exempt from doubt, then we should abandon any hope of connecting “the given”, “the datum”, with the world we live in. It is of interest to remark here that Santayana’s result is basically in line with that of McDowell concerning the “Cartesian picture” as stated, for instance, in “Singular Thought and Inner Space”. The problem is, in McDowell words, how “the fully Cartesian picture is entitled to characterize its inner facts in content-involving terms. For, if what is completely certain has the features that both assert it has, then there is a serious question about how it can be that the given, the datum, is not *blank* or *blind*, but purports to be revelatory of the world we live in” [McDowell (1986), p. 152].

I take Santayana’s thought-experiment to be only one possible, perhaps debatable⁹, way of developing the Cartesian quest for certainty to its fullest extent. What we get, in fact, is certainty at the price of emptiness. The “datum” of the solipsist of the present moment has absolute certainty (it is an “essence”, as Santayana calls it). Precisely for this reason, however, it cannot bear any relations at all with the “external” world (the “existences”);

it is essentially autonomous and unconnected. This is indeed a very intriguing outcome. We were searching for certainty *vis à vis* the sceptical challenge, we found it, but we have immediately realized that it is powerless to guarantee one single item of knowledge. How can it be that the datum, which is absolutely certain, has turned out to be *nothing*? What puzzles us here bears a certain similarity with the amazement expressed by Wittgenstein's opponent in *Philosophical Investigations* § 304. There, he complains that "again and again [you] reach the conclusion that the sensation itself is a *nothing*". Wittgenstein replies: "Not at all. It is not a *something*, but not a *nothing* either! [...] a nothing would serve just as well as a something about which nothing could be said." That is precisely the status of the datum: it is not a something (it is not an existence), but it is not a nothing either (it is an essence). Nothing could be said about the datum, because trying to say something about the datum is to express an adventurous belief about "the fact that the datum is given in a particular moment", a belief that can be true or false, therefore uncertain, and something uncertain cannot be a datum. The datum has *not* turned into nothing; we are perplexed only because we thought wrongly that it was a *something*!

Santayana actually thinks that scepticism conceived in this way is both logically and practically possible (although in the latter case only for a short period of time and "practised by the young philosopher, in his first intellectual despair"). Nonetheless, he finds healthy support in scepticism for the intellect: "There are certain motives [...] which render ultimate scepticism precious to a spiritual mind, as a sanctuary for grosser illusions" [Santayana (1923), p. 40]. Of course, he thinks that scepticism has *no effect* at all on our ordinary transactions with the world; it leaves the world unchanged. However, he stated on several occasions that the person that passes through the sceptical thought-experiment does not remain unchanged. On the contrary, the transit through scepticism is for Santayana a vital process which, in some way, changes the person that undergoes it. It makes humans more humble, so to speak, in the sense that they turn out to be more *prone* to accept that in order to establish that, for example, they think and live, they must appeal to *animal faith*¹⁰. "If they were too proud for that, and simply stared at the datum, the last thing they will see would be themselves".

III. Unjustified dogmatism?

By now, lots of Wittgensteinians will presumably be ready to accuse Santayana of flagrant and unacceptable *dogmatism*¹¹. To rely on “animal faith” to avoid the uncomfortable predicament of the solipsist of the present moment would not be essentially different from, for example, Moore’s, Austin’s or Cavell’s rejoinders of scepticism. If we accept Marie McGinn’s diagnosis in *Sense and Certainty* [McGinn (1989)] as a paradigm of a widespread interpretation of Wittgenstein, the three aforementioned philosophers use the fact that scepticism is *unbearable* as a *sufficient* basis for denying any compulsory force in sceptical conclusions. Santayana, on the other hand, would be employing similar tactics when he appeals to the gulf opened up between thought and action, between theory and practice, as a result of sceptical arguments. When this gap appears, philosophy, says Santayana, has lost its “honesty”. That is to say, philosophy no longer stands where it should; and for him philosophy should stand *exactly* where *life* stands. Therefore, the *irrelevance* of scepticism and the justification for bypassing it seems to follow as a plausible consequence.

Now, it is worth looking at Santayana’s stance a little closer. To begin with, Santayana – as well as Wittgenstein – *is not* prepared in principle to dismiss sceptical arguments merely *on account* of their radical *disagreement* with real life. It is true that from the very beginning of *Scepticism and Animal Faith* Santayana announces his great respect “for a certain shrewd orthodoxy which the sentiment and practice of laymen maintain everywhere”, [Santayana (1923), p. v] (and on that score, he agrees with Wittgenstein). However, he never rejects the *soundness* of genuine scepticism on this account. What Santayana freely admits is that the whole thought-experiment has a *speculative character* and that he cannot admit in this respect any “sacrifice of truth to utility”. His point is rather that: “there is [...] a wise direction of curiosity upon things on the human scale, and within the range of art. Speculation beyond those limits cannot be controlled, and is *irresponsible*” [*ibid.*, p. 105, my italics].

Furthermore, he feels himself entitled to assert “I am a dogmatist”, “complete scepticism is [...] not *inconsistent* with animal faith; the admission that nothing given exists is not incompatible with belief in things not given” [Santayana (1923), p. 105, my italics]. According to Santayana, to be a dogmatist is a result, so to speak, of taking scepticism *seriously*. For the honest sceptic, “scepticism” does not mean “disbelief”: “disbelief is not

sceptical; it is *belief* in the falseness of a previous assertion". True sceptics merely consider belief and take into account its inherent uncertainty. They discover, in short, that all belief is a dogma. Now, they cannot *say* that any belief, much less all belief, is *wrong* (see Section II above). Santayana's thought-experiment tries to make it clear that when scepticism is pushed "as far as one logically can", we cannot avoid the conclusion that "the given" (the datum) – which purports to be absolutely certain – is completely *useless* for our initial proposal and this result *bewilders* us. *First*, since we embarked on the thought-experiment because a belief is apparently a *dogma*, dogmas struggle for life and we have no sure criterion for deciding which of them is true: "Scepticism is a suspicion of error about facts, and to suspect about facts is to share the enterprise of knowledge" [Santayana (1923), p. 8]. *Second*, what we sought after was to *strain* those dogmas "through the utmost rigours of scepticism"; that is, what we were looking for was to find a realm of *indubitable objects*. But, *third*, although it seemed for a moment as if the solipsist of the present moment had achieved the goal, we immediately realized that "the given" or "the datum" is something, so to speak, *encapsulated*, something that *does not* reside in a larger world, but constitutes the only one that there is. This is what Santayana calls "to clear one's mind of illusion, even at the price of intellectual suicide" [*ibid.*, p. 10]. *Fourth*, the thought-experiment concludes with the total destruction of the building blocks with which we tried to address the initial problem. This is a case in which our endeavours reveal themselves as *nonsense*, while, at the same time, we cannot get rid of the result because we keep granting it a certain *compulsory* force. Santayana's confession that he is a dogmatist and that "complete [genuine] scepticism" is not "inconsistent with animal faith" is, I take it, to *admit* this perplexing predicament and to *accept* that there is nothing one can do except *submit* to physical necessity¹². On the one hand, the reflexive character of the thought-experiment makes it *irresponsible vis á vis* the world; but this kind of criticism is in itself *unstable*, oscillating between nonsensicality and dishonesty: "the critical attitude", says Santayana, "when it refuses to rest at some point upon vulgar faith, inhibits all belief, denies all claims of knowledge, and becomes dishonest, because *it itself claims to know*" [Santayana (1923), p. 187, my italics].

I cautiously consider Santayana to be committed here to what James Conant has called in a recent paper ["Varieties of Scepticism", Conant (2004)] "the Kantian way with scepticism". The Kantian way with scepti-

cism consists, in its *positive* part, in “a *radical following* through of the implicit assumptions of a sceptical position up to the point at which the position founders in incoherence”. In turn, the *negative* part seeks “to find a way to respond to the Cartesian that *bypasses* the task of having to enter into the details of Cartesian examples, exploring how they are motivated, and considering how they differ from ordinary examples of knowledge” [Conant (2004), p. 124]. It is true that Santayana’s motivations for commencing his thought-experiment are Cartesian (again in Conant’s terminology) and not of the Kantian variety.¹³ In principle, Santayana’s problem appears to be *epistemological*: we are *suspicious* about facts and we are trying to isolate true beliefs; that is, beliefs which really (i.e. not dogmatically) are *symbols* of facts. However, as the experiment proceeds, this Cartesian search for epistemic security gradually changes, being replaced eventually by the “Kantian way”. Santayana sets out on his journey at a point in which he takes the possibility of experience *for granted*, *although* he has the *suspicion* that beliefs based on experience may not correspond to facts. This philosophical anxiety brings him to a point (the solipsism of the present moment) at which *certainty* is purchased at the cost of *nonsense*; a point at which the whole idea of a world to which we have access through the senses “vanishes in thin air”.¹⁴ Now, the problem we are left with instead is not the problem of which beliefs, if any, are true, but the very different (Kantian) problem of the *conditions of possibility* for beliefs about the external world.

This is the point at which one may claim that Wittgenstein’s and Santayana’s treatments of scepticism *converge* somewhat. It is not easy to see things this way because there is a tendency to think that only Wittgenstein’s later works (especially *On Certainty*) are the *main*, if not *the* exclusive, source of Wittgenstein’s dealings with scepticism.¹⁵ However, in “Varieties of Scepticism”, Conant argues convincingly, for example, contra Cavell¹⁶, in favour of interpreting the famous Kripke’s rule-following paradox of *Philosophical Investigations* § 201 [Kripke (1982)] as a “Kantian variety” of scepticism. It is also plausible to think of, for example, the private language argument in its more traditional mould (§ 243 ff.) as one argument (among many others) of the Kantian variety, but this is not a question that I shall pursue here.

However, what Conant calls the “Wittgensteinian way with scepticism” has an *additional component* that should be considered as a *supplement* (and not as an *alternative*) to the Kantian way. By means of this additional

movement (“the movement towards the ordinary”, as Conant calls it), Wittgenstein would try “to bring the sceptic back to the place where he started, where he already is and never left, but in such a way that he is able to recognise it for the first time” [Conant (2005) p. 125]. I take it that Conant is referring here essentially to Wittgenstein’s analyses in *On Certainty*, to *Tractatus* 6.51 and, perhaps, to some particular fragments of the *Blue and Brown Books* and the *Philosophical Investigations*. Now, Santayana *explicitly* opposes this form of attacking scepticism. And if we consider that this is one of the most original features of Wittgenstein’s treatment of scepticism (“the movement down the dialectical ladder”, again in Conant’s words), then this is precisely the point at which Wittgenstein and Santayana part company. Santayana’s reasons should be clear by now. From the very outset, he considers that the sceptic does not need *any particular credentials* for using terms like “knowledge”, “doubt”, etc., whether in the philosophical or in the ordinary sense. He seems to think that philosophers have the right to practise “disengaged reflection”, with the consequence that his thought-experiment is *speculative*, from beginning to end. This means that it is perfectly possible for a solipsist of the present moment to lead a life in which his scepticism peacefully coexists, without any interference, with his animal existence. The real problem arises when the sceptic is dishonest, when he *succumbs* to belief; that is, when he uncritically takes an idea (or an “essence”) for a thing. “The error”, says Santayana, “came from a wild belief about it; and the possibility of error came from a wild propensity to belief. Relief now the pressure of that animal haste and that hungry presumption; the error is washed out of illusion; it is no illusion now, but an idea” [Santayana (1923), p. 73]. Not surprisingly, this washing away of illusion brings us back again and again to the last stage of the thought-experiment, in which the solipsist of the present moment lives his world (*the world*).

One should not underestimate the differences between Wittgenstein’s and Santayana’s treatments of scepticism with respect to this point. These differences reveal a profound disagreement between the two philosophers as regards their conception of meaning and even in their vision of philosophy. As Conant has remarked, the originality of Wittgenstein’s treatment of scepticism lies in “pushing the sceptic in the opposite direction from the one in which Kant seeks to push it” [Conant (2004), p. 125]. Wittgenstein would not be content with the “Kantian (and Santayana’s) way” of following the sceptic’s presuppositions to their ultimate consequences. His deep

concern with the *bewitchment* that language exerts on us impels him to examining “the initial steps in the Cartesian sceptic’s progress towards doubt, identifying how the sceptic passes from ordinary to philosophical doubt, pinpointing the decisive movement in the philosophical conjuring trick and diagnosing why it is the one that is bound to seem most innocent” [*ibid.*].¹⁷ If the originality of Wittgenstein’s treatment of scepticism resides mainly in this point, nothing of this kind may be found in Santayana. For the latter, Wittgenstein’s analysis of the *real* conditions of use of doxastic or epistemic terms would lie very far from the concerns of the Santayanian philosopher, who, emancipated from existences, takes delight in the realm of the “essence”. However, one should not overestimate these differences either. Both Santayana and Wittgenstein aim, in Cavell’s words, to remove the sceptic’s *theatricality* [Cavell (1979), p. 273]. In fact, sceptical arguments are deprived of their appeal both when “[we] bring words back from their metaphysical to their everyday use” [*Philosophical Investigations*, §116] (the “original” Wittgensteinian way) and “pass from a piece of disguised nonsense into something that is patent nonsense” [*ibid.*, §464]. The latter is what both Santayana and Wittgenstein are trying to do. It is an open question who offers a better and livelier description of the details of the sceptic’s predicament.

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Notes

1. Cfr. Hodges and Lachs (2000), p. 1.
2. Cfr. Stroll (1994), p. 14.
3. Cavell (1979), p. 236.
4. Bertrand Russell, for example, was a personal friend of Santayana's. In a very Wittgensteinian way, Santayana came to the aid of Russell in 1937, when the latter found himself in financial difficulties. Furthermore, Russell wrote a contribution to the second volume of "The Library of Living Philosophers" series, *The Philosophy of George Santayana*, in which he makes a flattering comparison between Santayana and Spinoza. However, he is sometimes highly critical of, for example, Santayana's thesis concerning the divorce of essence from existence and the "animal faith" postulate [Russell (1951)].
5. In Russell (1951), p. 454 one can read: "To understand Santayana, it is necessary to bear in mind some general features of his circumstances and temperament. While his environment has been mainly American, his tastes and preferences have remained predominantly Spanish. This clash [...] produced a rare explicitness and self-knowledge as regard values. *Those who have always lived in sympathetic surroundings have had no occasion to become aware of the impersonal part of their springs in action, since no one has questioned it. Unsympathetic surroundings, on the contrary, generate, in a reflective mind, an intellectual defensive system*" [my italics]. Russell's reflection could be applied *pari passu* to Wittgenstein, a typical Central European living in Cambridge's "unsympathetic" surroundings who also develops an "intellectual defensive system". By the way, Santayana, in contrast to Wittgenstein, never renounced his Spanish Citizenship.
6. Cfr. Valdés (forthcoming).
7. Of course, this widespread point of view is highly debatable. One has only to recall that Kripke's *Wittgenstein on Rules and Private Language* [Kripke (1982)] deals with a central theme of Wittgenstein's *Philosophical Investigations*. However, Cavell (1990), for example, questions whether Kripke is really talking there about scepticism. On the other hand, Conant (2004) – to whom I shall refer later – makes a forceful defence of the existence of, at least, two varieties of scepticism in Wittgenstein's work.
8. There are several expositions of Santayana's path to scepticism from which I have benefited here. In this respect, I would like to cite Hodges and Lachs (2000), Sprigge (1974), Faerna (2007) and Moreno (2007). The opportune designation "thought-experiment" is used by Moreno in the aforementioned book.
9. For example, Russell (1951) is very critical regarding Santayana's divorce between essence and existence. Curiously enough, this was a thesis that Russell adopted during a period of his philosophical career.
10. I take it that what Santayana understands by "Animal Faith" is something similar to Russell's "Instinctive Belief" in Russell's *The Problems of Philosophy*, OUP, 1967, p. 11. On the other hand, it is worth noting that Wittgenstein uses a very similar expression, presumably with a similar sense, in *On Certainty* (358-59, 475), my italics:

Now I would like to regard this certainty, not as something akin to hastiness or superficiality, but as a form of life. (That is very badly expressed and probably badly

thought as well.)

But that means I want to conceive it as something that lies beyond justified or unjustified; as it were, as something *animal*.

I want to regard man here as an *animal*; as a primitive being to which one grants instinct but not ratiocination [...].

11. In fact, I am of the opinion that Santayana's treatment of scepticism is a clear case of dogmatism [see Valdés-Villanueva (2007)]. However, his dogmatism belongs to a very peculiar kind (one could say that it is "overt" or "confessed" dogmatism) and, as we shall see, it is a typical (and almost certainly wrong) reaction to the bafflement produced by the result of the thought-experiment regarding scepticism.
12. Compare the predicament of the solipsist of the present moment with the list of features of the Kantian genre of Scepticism given by Conant [Conant (2004), pp. 11ff.].
13. This is Conant's formulation of the Cartesian/Kantian opposition: "The most familiar way of formulating the contrast between these two problematics is as *one of knowledge vs. the conditions of knowledge*. Thus one is often told something along the following lines: the Cartesian wants to arrive at knowledge; the Kantian wants to arrive at the ground of the possibility of knowledge" [Conant (2004) p. 99].
14. This expression is used by Kripke (1982), p. 22 and alludes to the intriguing consequence of the "Kripkenstein" sceptical paradox: "the entire idea of meaning vanishes into thin air". (Quoted in Cavell (1990), p. 80 and Conant (2004), p. 124.) It is clear that I use Kripke's expression here with a different, though not unrelated, sense.
15. *Tractatus* 6.51 would be only a "statement of purpose" to be developed thirty years later.
16. There is a discussion in Cavell (1990) about the scope of Kripke's examples in Kripke (1982). In particular, Cavell rejects them as cases of scepticism. Apparently Cavell only accepts as "proper" scepticism what Conant calls "the Cartesian variety". However, his basis for this claim is rather weak, as Conant has pointed out: "A lot of scholars would agree with Cavell's contention that what Kripke calls "Wittgenstein's sceptical solution" is not anything Wittgenstein would countenance as a 'solution' to a philosophical problem. However, Cavell moves precipitously from this observation to the conclusion that if Kripke's solution is not Wittgenstein's, then 'the problem to which Kripke offers the solution is not (quite) Wittgenstein's either.' This is a non-sequitur" [Conant (2004), p. 123].
17. It is important to remember here that Conant does not conceive the "Wittgensteinian way" as an alternative to the "Kantian way", but as a *supplement*. "The Kantian way compels the sceptic to progress further and further forward, further and further from the ordinary, and deeper and deeper into philosophical perplexity [...] The Wittgensteinian way adds to this pressure and additional one that seeks to bring the sceptic back to the place where he started, where he already is, but in such a way that he is able to recognise it for the first time" [Conant (2004), p. 125].

Section 2:

Wittgenstein and the Digital Turn

On Butterfly Feelers: Some Examples of Surfing on Wittgenstein's *Tractatus*

LUCIANO BAZZOCCHI, PISA

Denk nicht, sondern schau!

Numbers

In this paper I present a hypertext version of Wittgenstein's *Tractatus* which I have developed since 2004 (see <http://www.bazzocchi.com/wittgenstein/default.asp>). The hypertext shows Wittgenstein's *Tractatus* according to its logical architecture and enables the reader to follow its structural nexuses rather than the flat sequence of the printed pages. In my hypertext oriented interpretation of the *Tractatus*, the fundamental key is the numbers of the remarks. I believe that they are to be taken very seriously, as are Wittgenstein's words when he writes to von Ficker: «The decimal numbers of my remarks must absolutely be printed alongside them, because they alone give to the book perspicuity [*Übersichtlichkeit*] and clarity: without the numbering it would be an incomprehensible jumble»¹.

From my perspective, the best way of making us see the *Tractatus* in its proper shape, is to interpret the decimals as technical specifications in order to generate a hypertext (decimals are able to exactly define the organization of the pages, and the connections and the positions of all the remarks). Investigating the hypertext generated from the decimal numbers of the propositions seems in fact to correspond to the proposal contained in the *Tractatus*' explicative note, if we interpret it not as a justification for an unusual numeration, but as a reference to the deep structure of the book, and also as a reading prescription. «Therefore propositions 1, 2, 3, 4, 5, 6, 7» – Wittgenstein specified in the original version of the note – «are the cardinal propositions, propositions n.1, n.2, n.3, etc. are comments to the proposition N° n; propositions n.m1, n.m2, etc. comments to the proposition

N° n.m; and so on».² That is, we must be in a position to pick up at first sight the whole design of the work, in order then to be able to investigate every proposition, thereafter the comments to every investigation, and the comments to the comments, in cascade («and so on») throughout the innumerable paths that the recursive structure permits.³

The main page of the hypertext is therefore the synthetic view with the seven cardinal propositions. It is the starting point for an initial idea of the work, its extreme synthesis – and also, each time, the conclusive page, the point of departure from the system. By clicking on a proposition, a detailed window opens: the proposition itself is on the top, followed by the comments of the immediate successive level. The approach to the text proceeds in an analogous way for every page: after one general look, we can decide to return to the origin page (eventually in order to choose a different path), or to continue towards a further level of comment; and so on recursively. The effect is to reconstruct the conceptual map thanks to logical relations, translated in spatial relations by the hypertext. Here really the logical space and the topological space concur to only one formal representation; aesthetic form and logical form are intuited along the same process of progressive exploration. The sharpening of the formal intuition can lead not only to a different understanding of the remarks, but also to a better sensibility regarding the architecture as a whole.

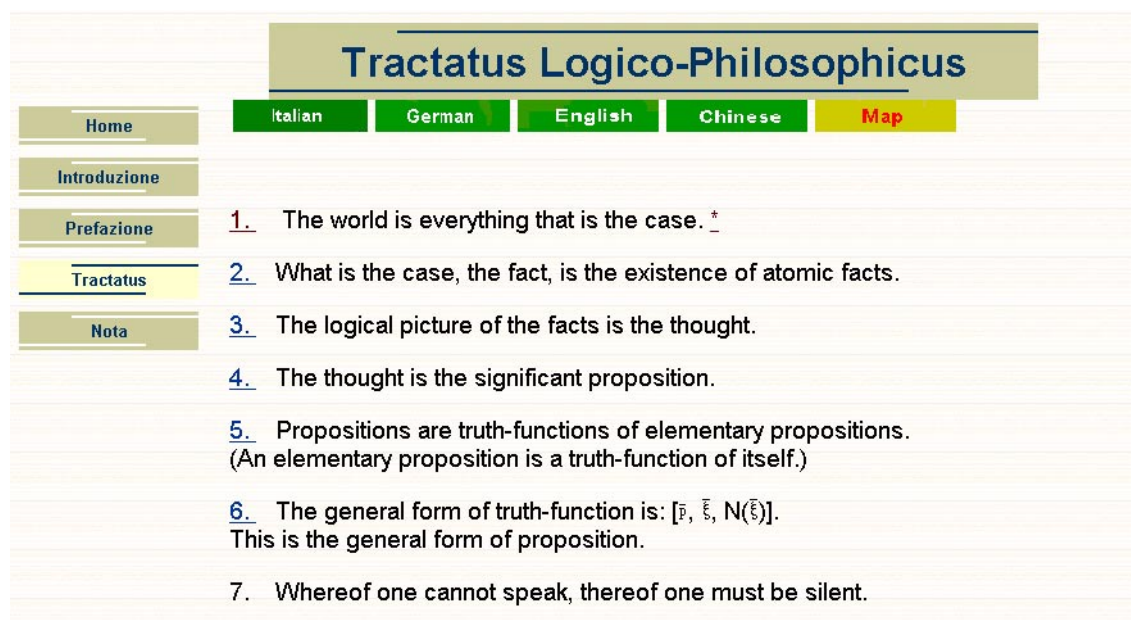


Figure 1: Hypertext homepage.

On the home page, the structural asymmetry emerges at once between the first six propositions (on which we can click in order to open the windows of the analytical fractal) and proposition seven, a pure one-dimensional limit. If we observe that from the point of view of the anticipation supplied by the author in the Preface («The whole meaning of the book could be summed up somewhat as follows: What can be said at all can be said clearly; and whereof one cannot speak thereof one must be silent»), we see that, by zooming in it, «what can be said clearly» progressively expands (propositions 1-6, etc.), while the second part always remains the same (proposition 7: «Whereof one cannot speak, thereof one must be silent»).

The same paradox returns in the letter to von Ficker: «My work consists of two parts: the one presented here plus all that I have not written. [...] Where many others today are just gassing, I have managed in my book to put everything firmly into place by being silent about it». Proposition 7 is no further analyzable because it's a pure limit, it's the envelope that delimits the world of the sayable within which we remain necessarily confined. In the key of Aristotelian ontology, it could be suggested that sections 1-6 constitute the matter of the work, while proposition 7 represents its form, i.e. its more inner character. In the hypertextual approach, all this returns at each immersion in the *Tractatus*, thanks to the architectonic asymmetry of proposition 7 that, starting from the home page, is reflected all through the travel.⁴

By the way, note how much the home page of the hypertext is similar to the first page of the original drawing up of the *Tractatus*, at the beginning of the so-called “Prototractatus” notebook. *Prototractatus*' first page starts from the cardinal propositions and already contains 6 out of 7 of them, arranged together with some first level comments. In reality, it's probable that proposition 6 was added to the page only later on, when the drawing up process was much more ahead: but Wittgenstein seems to want to maintain precisely such a general and unitary outline.⁵

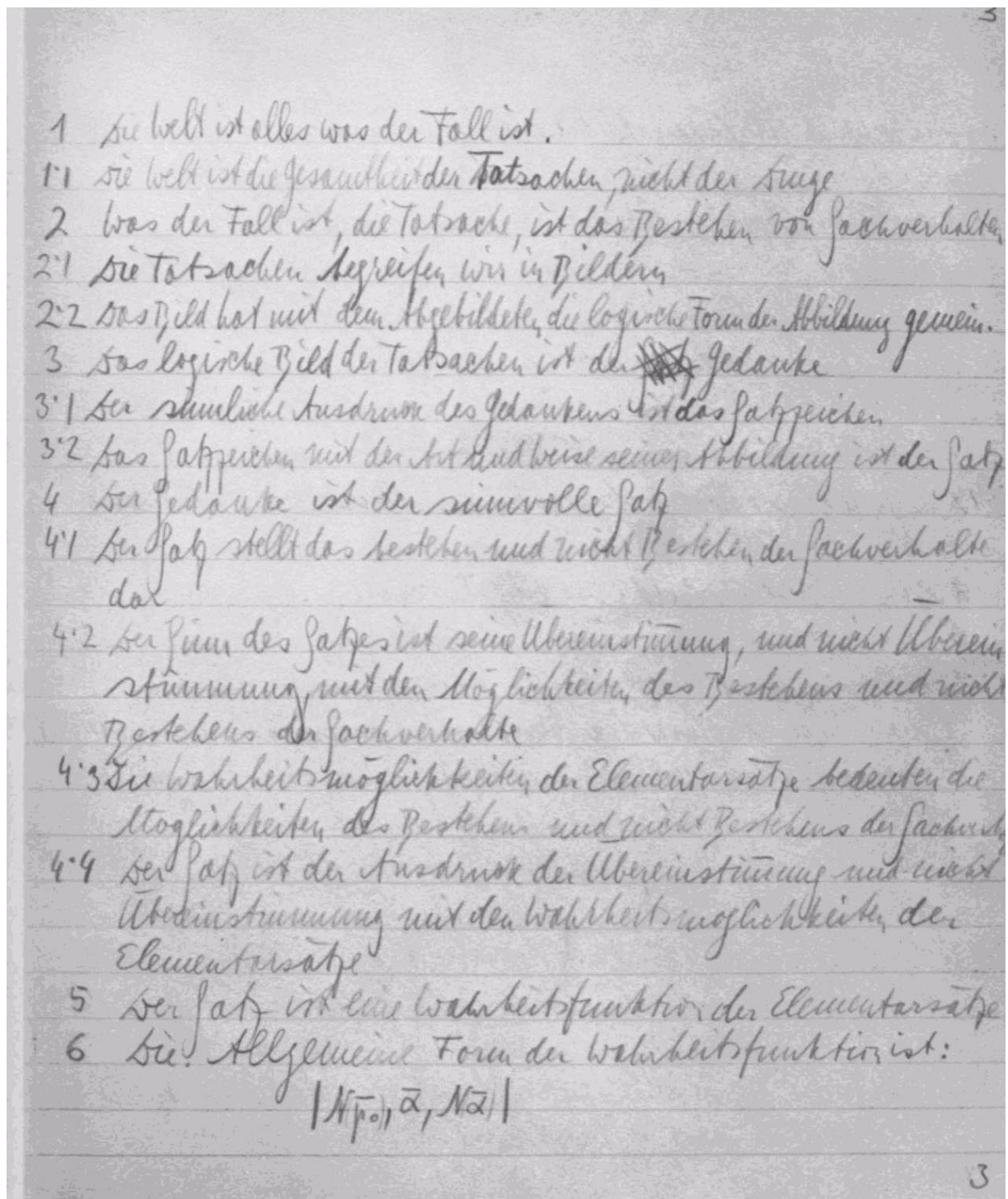


Figure 2: Facsimile of the first text page of the Prototractatus notebook (The Bodleian Library, University of Oxford, MS. Germ. d. 7, p. 3)

Linguistic games

Let us therefore begin travel in the hypertext – which here can only be shortly exemplified – along one of the more evident paths, through the synthetic page dedicated to the picture theory:

2.1 We make to ourselves pictures of facts.

2.2 The picture has the logical form of representation in common with what it pictures.

Clicking on 2.1, we arrive at a more articulated panel (the only one in the *Tractatus* to contain nine propositions, the maximum number given by the decimal system of structuring), that marks an exhaustive and in itself completed progression. Dedicated to the remark «We make to ourselves pictures of facts», the screen embraces a rapid sequence, in which two distinguished formal ganglia ask for our attention. The more obvious, of acoustic rather than of grammatical nature, rises from the unusual assonance between propositions 2.17 and 2.18. Why therefore are they so similar, these two phrases that deal with similitude? What do they have in common between them, in the meanwhile explaining what picture and reality have in common?

Let's try and find an answer by means of pure formal tools, that is by mechanically copying *all the propositional signs that are common* to the two propositions. Therefore:

What picture must have in common with reality in order to be able to represent it – rightly or falsely – is form .

As one can see, all that the two propositions (which illustrate what two similar objects have in common) have in their turn in common, forms an intelligible proposition that says that the two subjects of a pictorial relation (image and reality, proposition and reality, proposition and proposition) have form in common.

2.1

Italian German English Map

We make to ourselves pictures of facts.

2.11 The picture presents the facts in logical space, the existence and non-existence of atomic facts.

2.12 The picture is a model of reality.

2.13⁽¹⁾ To the objects correspond in the picture the elements of the picture.

2.14⁽¹⁾ The picture consists in the fact that its elements are combined with one another in a definite way.

2.15⁽¹⁾ That the elements of the picture are combined with one another in a definite way, represents that the things are so combined with one another. This connexion of the elements of the picture is called its structure, and the possibility of this structure is called the form of representation of the picture.

2.16⁽¹⁾ In order to be a picture a fact must have something in common with what it pictures.

2.17⁽⁴⁾ What the picture must have in common with reality in order to be able to represent it after its manner - rightly or falsely - is its form of representation.

2.18⁽²⁾ What every picture, of whatever form, must have in common with reality in order to be able to represent it at all - rightly or falsely - is the logical form, that is, the form of reality.

2.19 The logical picture can depict the world.

Home Su 1. 2. 3. 4. 5. 6.

Figure 3: Virtual panel 2.1.

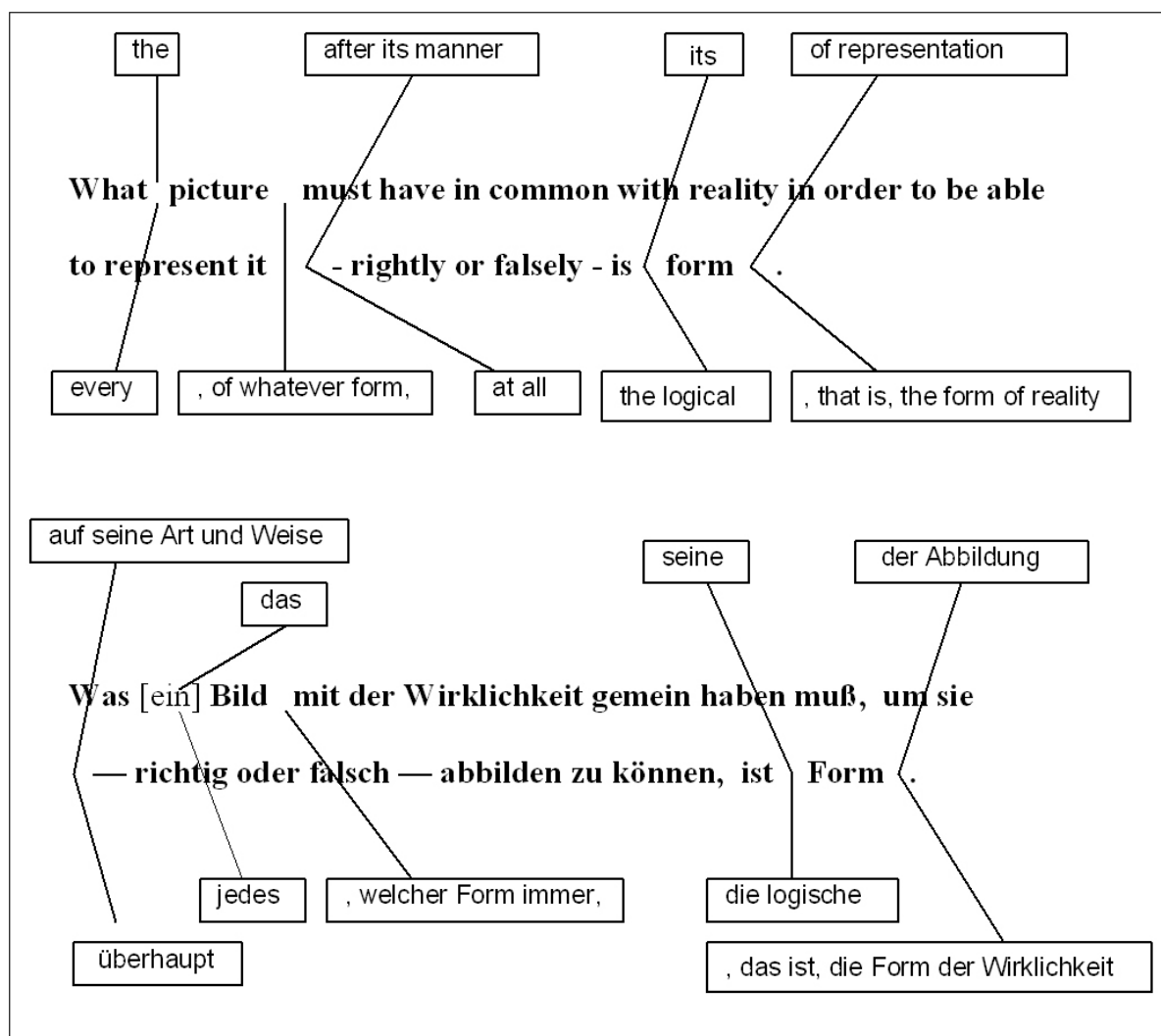


Figure 4: The hidden remark and the game: spot the differences. The English version here adopted is the Odgen-Ramsey translation, revised by Wittgenstein himself.

We can continue with the syntactical manipulation, now playing the “spot the difference” game (between two pictures, or two propositions – it makes no difference, if propositions are like pictures). If we then align on the one hand the specific differences of 2.17, and on the other the specific differences of 2.18, we notice that they closely correspond. 2.17 represents the side of singularity: *the* single picture has in common with reality, in order to represent it *after its manner*, *its* form of representation. 2.18 picks up the aspect of the generalization: *every* picture, *of whatever form*, has in common with reality, in order to represent it *at all*, the *logical* form, *that is the form of reality*. With the charade, Wittgenstein emphasizes the jump to generalization, one that comprehends what all the possible images of a specific reality have in common, i.e. the logical structure of reality itself. The formal

game between propositions 2.17 and 2.18, translated in similar icons, shines on the page and invites us to follow the reflections thus mirrored.

If someone has any doubt that the charade can only be a fortuitous event, he can examine how, on page 6 of the *Prototractatus* manuscript, Wittgenstein has repeatedly corrected the two propositions, with cuts and inserts, until balancing exactly, on the hidden phrase, the specific contribution of each of them (fig. 5). It's a reasonable assumption that this "hidden phrase" had even been, from the chronological point of view, the original nucleus on which basis the 2.17 and 2.18 statements were defined. In fact, it appears already in the 1914 diary as: «The form of a picture can be said that in which the picture *must* concord with reality (in order to be able to represent it)»⁶.

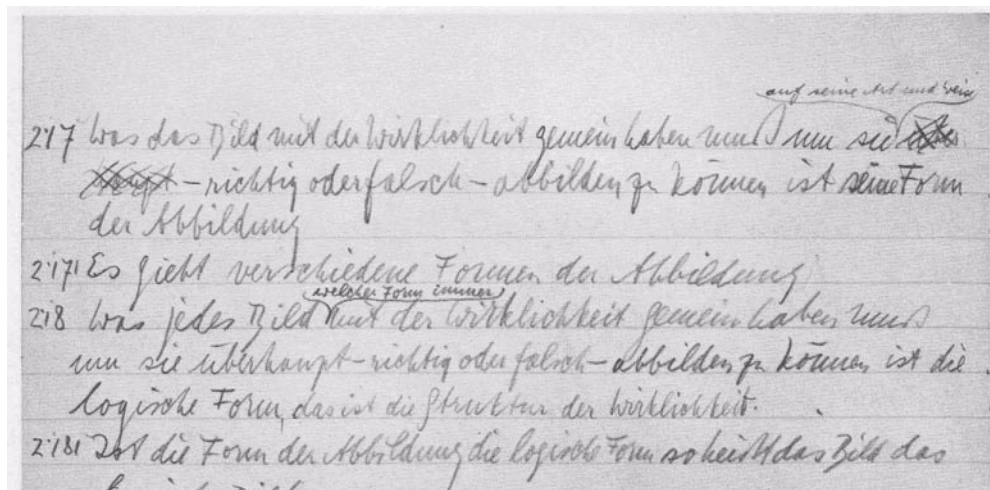


Figure 5: The elaboration of propositions 2.17 and 2.18 on p. 6 of the manuscript (The Bodleian Library, University of Oxford, MS. Germ. d. 7, p. 6).

It's not surprising that the critical literature has never noticed the charade, even if this step has been greatly studied. In the traditional sequential way of reading the book, the point is not so evident, because our attention is totally engaged in managing formal and semantic relations between the various assertions. Moreover, in a sequential reading it is usual to assume a conceptual development from page to page, instead of a topological picture of conceptual relations. On the hypertext page, on the contrary, the logical form of the work is the backbone of the reading process itself, and our formal sensibility is enhanced at its upper level. It's impossible not to notice the particular relation between the two propositions. The difficulty of focusing the point in the traditional approach is evident even in the best analysis

of this step, David Pears' article [Pears 1977]. We can find the main lines of Wittgenstein's picture theory, Pears writes, «in the second part of the second of the seven sections of the *Tractatus*» [p. 191]. More specifically, «the introduction of the images in *Tractatus* 2.1-2.225 can be divided into two sections. The first, which runs down to 2.174, [...] and] the second section, which starts at 2.18» [p. 192]. Pears drafts the «gradualism» [p. 195] between these two propositions, in which the generalization would happen, but attributes the hard work of his discovery to the hiding operated by Wittgenstein, in virtue of which «the concept of a picture is generalized by stealth» [p. 195]. Pears cites 2.174 as the immediate previous step before 2.18, and in which «the concept of a picture has not yet been explicitly generalized» [p.193]. Generalization that Wittgenstein would then introduce unexpectedly with what Pears reads as the *following* proposition, 2.18. «The result is that we are led to generalize the concept of a picture by stealth, without quite knowing at what point we took the decisive step» [p. 193]. Of course the decisive step – the decisive juxtaposition – is between the remark 2.17 *and its immediate neighbour* (on the virtual page) 2.18: despite any interleaved comments. (I call “virtual” the hypertext pages because they depend only upon numerical relations and they don't correspond to any edited page. In effect, they are much more real than the paper pages stochastically separated by the printing process).

Indeed, because of the way in which it shines in the hypertext stated by the decimal numeration, the formal game organized by Wittgenstein could be defined as anything but a furtive action.

Feelers

Let us again observe the shape of virtual page 2.1. A second obvious formal particularity can be noticed: there is one proposition formally different from the others. It is the 2.15 remark: the only one on the page which is composed, in effect, by two distinguished periods. To a great extent, the virtual page 2.1 had already been developed in 1915 in pages 4-6 of the *Prototractatus*, but at the time all propositions were rigorously composed by only one period.⁷ The structure was supervised during the “*Korrektur*” in the summer of 1918; the two paragraphs of proposition 2.15, before untied, were reunited in the middle of the page, to illustrate how the possibility of the representation – indeed, of every possible structure – needs *complexity*.

A mouse that wishes to negotiate such a structure will suddenly find itself in a narrow passage, formed by only one tortuous concept: «The form of representation is the possibility that the things are combined with one another as are the elements of the picture» (2.151). It leads to a pentad of further comments; it is on the tip of these sensitive fingers that «the picture is linked with reality; it reaches up to it» (2.1511). Thanks to «the co-ordinations of the elements of the picture and the things» (2.1514), reality perhaps can even be touched: «These co-ordinations are as it were the feelers of its elements with which the picture touches reality» (2.1515)⁸.

It's difficult to return the clear impression that in this moment the hypertextual navigation gives, the impression i.e. of finding ourselves exactly on the thin veins of the feeler that is the 2.1 branch reaching towards the real world. «With “*Fühler*”» – specifies Wittgenstein to the editor Odgen – «I mean those things that butterflies have» [Wittgenstein 1973, p. 31]. The delicate extremity of the feeler still has a last extroversion: if the image wishes to become a meter and intends to measure scientifically⁹, in order *to touch* it must go further still: «Only the outermost points of the dividing lines *touch* [*berühren*] the object to be measured» (2.15121).

The metaphor of the antennae already occurs in a curious reference of 15 October 1914, which points to a step outside the diaries; the reference would seem a punctual comment to these first pages of the *Prototractatus* (or, possibly, of some its predecessor; note that «here» the matter is not the picture, but «the proposition»): «Here I have considered the relations between the elements of the proposition and their meanings almost like feelers, by means of which the proposition is in contact with the external world; and generalizing a proposition then is like withdrawing the antennas. [...] But is this image right? (Do I truly withdraw an antenna when, instead of $\varphi(a)$, I say $(\exists x). \varphi(x)?$)»¹⁰

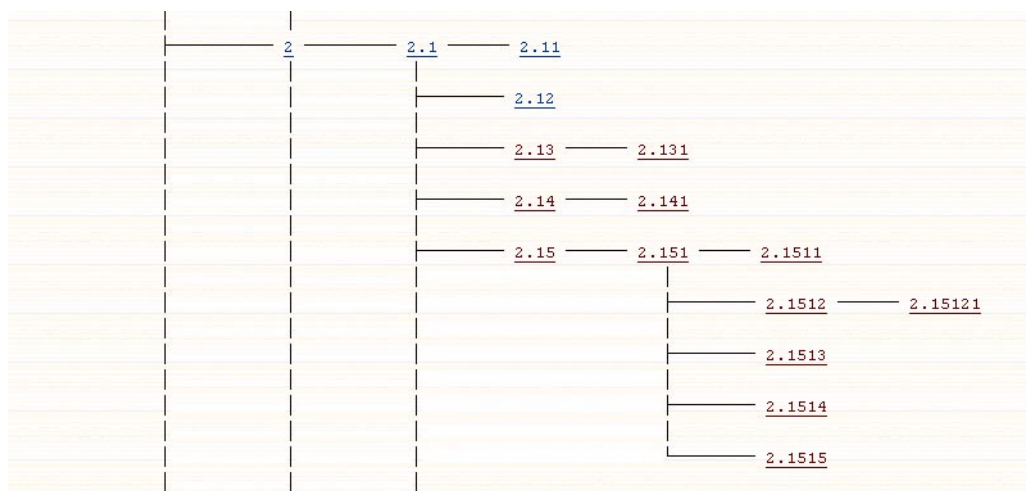


Figure 6: Hypertext map (particular of the branch 2.1).

If, as McGuinness assumes, «the status of his own propositions is always in his mind» [McGuinness 1988, p. 302], we can here assume the metaphor of the antenna, therefore well nested in the architecture of the *Tractatus*, as implicitly referred by Wittgenstein to the structure itself of his work. The progressive refining of the decimal cascade runs from the general level of the cardinal propositions to the particular details of the more extreme branches, like feelers stretched towards the truth: in order then to repeat its travel backwards again and «to withdraw the antennas». The thin filigree of the hypertext becomes almost a sensitive perceptive apparatus with which we explore the world (as a metaphoric example, see fig. 6).

Symphonies and gramophones

The exploration of the hypertext, like a visit to a city¹¹, has neither a proper point of departure, nor a definitive conclusion, but it's always in equilibrium between the formal net arranged by the author (that defines all exploration possibilities, i.e. the transcendental form of every possible travel) and the point of view, the idiosyncrasies and the choices of each reader. Rather, faced with the balanced dance of *Tractatus* articulations, we are tempted to try its *barycentre*. It is natural to test the fourth of the seven branches («The thought is the significant proposition»), which depicts the passage between the world of the facts and the world of the signs. On the rest, as McGuinness observes, «it is possible to defend the view that the work is a kind of systole and diastole around proposition 4, where the most basic propositions of its argument are to be found».¹² This central branch includes three

sections. The first, with triple decimal, states that the specific argument is language, with its difficulties and consequent philosophical drifts. The last, with simple decimal, discusses form and content of a propositional sign. The middle section (with double decimal) aims to picture the pictorial ability of the language itself: we are at the centre of the issue of how the sign can stay in the place of something else. As McGuinness writes, «we are here at the heart of the *Tractatus*. The essence of its account of propositions is contained in the propositions number 4.01-4.0641». ¹³

The focus is directly in evidence: «The proposition is a picture of reality. The proposition is a model of the reality as we think it is» (4.01). The analogy with the picture is explored in every possible suggestion: «A proposition states something only in so far as it is a picture» (4.03); «Propositions can be true or false only by being pictures of the reality» (4.06). The most tangible modelling is at the bottom of the tentacles spread towards reality: «And so the whole, like a living picture, presents the atomic fact» (4.0311). But just in the investigation of 4.01 the analogy, the similitude, shows itself to be the essence of the linguistic act. The *Tractatus* barycentre is hypertext page 4.01. ¹⁴

4.01

[Home](#) [Italian](#) [German](#) [English](#) [Map](#)

**The proposition is a picture of reality.
The proposition is a model of the reality as we think it is.**

1. 4.011 At the first glance the proposition - say as it stands printed on paper - does not seem to be a picture of the reality of which it treats. But nor does the musical score appear at first sight to be a picture of a musical piece; nor does our phonetic spelling (letters) seem to be a picture of our spoken language.

2. And yet these symbolisms prove to be pictures - even in the ordinary sense of the word - of what they represent.

3. 4.012 It is obvious that we perceive a proposition of the form "aRb" as a picture. Here the sign is obviously a likeness of the signified.

4. 4.013 And if we penetrate to the essence of this pictorial nature we see that this is not disturbed by apparent irregularities (like the use of # and › in the score).
For these irregularities also picture what they are to express; only in another way.

5. **4.014** ⁽¹⁾ The gramophone record, the musical thought, the score, the waves of sound, all stand to one another in that pictorial internal relation, which holds between language and the world.
To all of them the logical structure is common.
(Like the two youths, their two horses and their lilies in the story. They are all in a certain sense one.)

6. 4.015 The possibility of all similes, of all the images of our language, rests on the logic of representation.

4.016 In order to understand the essence of the proposition, consider hieroglyphic writing, which pictures the facts it describes.
And from it came the alphabet without the essence of the representation being lost.

Figure 7: The genuine barycentre of *Tractatus* hypertext.

This page is all a similitude, because the action itself of showing cannot be properly described, cannot further “be said”. Proposition 4.015 points to the «possibility of all similes» and is placed between the metaphor of the music (to say nothing, between parenthesis, of the symbolism of the tales) and the similitude of hieroglyphic writing. «And if we penetrate to the essence of this pictorial nature», we discover that «that inner pictorial relation which holds between language and world» is the same one that puts in relation «the gramophone record, the musical thought, the score, the waves of sound» (4.014).

Such phantasmagoria of metaphors encloses a last, further elucidation. It is not perhaps a fortuitous case that just on this page, from its more meaningful and evocative proposition (that joins the topic of the logical structure of the similitude to the symbolism of the tale), one can reach the last modification brought to the body of the *Tractatus*: the «addition 72» stuck in extremis to the typescript and lost on the troubled way to the German editor. The comment on which Wittgenstein has hesitated until the end, and that in the edition of the *Annalen der Naturphilosophie* leaves only one sibylline auto referential trace, specifies the logical statute of the «rule of translation».¹⁵

The problem is whether the translation from one symbolism to an other is or is not governed by rules, if it’s a solvable issue on the plan of the «logical structure» (that is, as it would be said in artificial intelligence, on the plan of the “manipulation of symbols”); this is naturally a crucial issue, on which successive Wittgensteinian reflection will become much more critical. By placing the *Tractatus* in equilibrium on the fulcrum of comment 4.0141, Wittgenstein resolves here to support the constituent nature of the rule: the inner likeness between conformations «which at first sight seem to be entirely different» would stand in the fact «that there is a rule by which one could reconstruct the symphony from the line on a gramophone record and from this again – by means of the first rule – construct the score». The ability to interpret the language is similar to the ability of the phonograph to reproduce the melody, for it brings this «law of projection» wired in its own structure. The metaphor of the gramophone, physical instantiation of «the rule of translation», almost seems to suggest the idea of artificial systems, based on formal rules, able to interpret «the logic of representation».

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Notes

1. [Wittgenstein 1969, p. 39]. This is one of the two points in which Wittgenstein writes about the *Tractatus* numeration. In the other, the note to *Tractatus*' first proposition, he claims that the decimal figures indicate the emphasis laid upon respective propositions "in my representation [*in meiner Darstellung*]". So, we can infer that "the decimal numbers alone can transform the incomprehensible jumble of the book into a perspicuous representation". "A perspicuous representation [*übersichtliche Darstellung*] – Wittgenstein will specify in the *Philosophical Investigations* (§122) – makes understanding possible, which just consists in the fact that we "see connections"" (§122).
2. Added by hand on TS 204 ("Gmunden Typescript"), and then corrected by eliminating the reference to the "Kardinalsätze".
3. The top-down strategy is also the way adopted by Wittgenstein in composing the *Tractatus*, if we remain at the content and the numeration of the *Prototractatus* working notebook. Five of the seven cardinal propositions were composed at once on the first page. Of the comments to them, 13 out of 15 (87%) with a single decimal are contained in the first eight pages of the manuscript; 68 out of 81 (84%) with two decimals are in the first fifteen pages, 135 out of 170 (79%) with three decimals appear within the first half of the note-book.
4. A more careful analysis of the hypertext approach to proposition seven can be found in [Bazzocchi 2007(1)].
5. For an outlook on the *Prototractatus* process of composition, see [Bazzocchi 2007(2)].
6. "Die Form eines Bildes könnte man dasjenige nennen worin das Bild mit der Wirklichkeit stimmen muß (um sie überhaupt abbilden zu können)" (20 October 1914).
7. The whole first layer of the notebook, until the caesura at page 28, was composed of single and original propositions (not drafts from previous diaries). Beginning from page 28, the composition technique changes completely, with systematic resumptions of entire steps from the previous notebooks. This "methodological turn" starts in October 1915 and is prefigured in the warning in the notebook head-page; see [Bazzocchi 2005 and 2006(1)]. The 283 propositions of this first layer comprised the skeleton of the entire work (with exclusion of branch 6), in one already complete exposure of all main levels.
8. "Diese Zuordnungen sind gleichsam die Fühler der Bildelemente, mit denen das Bild die Wirklichkeit berührt".
9. "Es ist wie ein Maßstab an die Wirklichkeit angelegt" (2.1512).
10. "Ich habe hier die Beziehungen der Satz-Elemente zu ihren Bedeutungen gleichsam als Fühler betrachtet durch welche der Satz mit der Außenwelt in Berührung steht; und das Verallgemeinern eines Satzes gleicht dann dem Einziehen der Fühler; bis endlich der ganz allgemeine Satz ganz isoliert ist. Aber stimmt dieses Bild? (Ziehe ich wirklich einen Fühler ein wenn ich statt $\phi(a)$, $(\exists x).\phi(x)$ sage?)".
11. Surfing on the hypertext seems to be isomorphic to Wittgenstein's method in his lessons: "In teaching you philosophy I'm like a guide showing you how to find your way round London. I have to take you through the city from north to south, from east to west, from Euston to the embankment and from Piccadilly to the Marble Arch. After I have taken you

many journeys through the city, in all sorts of directions, we shall have passed through any given street a number of times – each time traversing the street as part of different journey. At end of this you will know London; you will be able to find your way about like a born Londoner. Of course, a good guide will take you through the more important streets more often than he takes you down side streets; a bad guide will do the opposite” [Gasking-Jackson, 1967, p. 51].

12. [McGuinness 1988, p. 304] This way of expressing oneself, for which in some way fundamental propositions would be found “in” proposition 4, applies very well to the virtual reality of the hypertext, that develops itself by “opening” each remark with the mouse. The vital pulsation, the diastole and the systole, correspond to the feeling of entering and exiting from a level of detail, of opening and closing any further windows.
13. [McGuinness 1988, p. 306]. The analysis of McGuinness often works by nested levels, even if the sequential reading obliges him to extract the virtual pages only mentally, and to cite by heterogeneous blocks: here, the indication “4.01-4.0641” obviously means reference to propositions 4.01-4.06 and, consequently, to their respective comments.
14. If we continued instead by central paths, perhaps we would be forced to choose the third of the six doors, and then the first of the two successive ones, and then the second one of the final couple, until reaching the inner nucleus: “My fundamental thought is that the “logical constants” do not represent; that the logic of the facts cannot be represented” (4.0312).
15. 4.0141: “In the fact that there is a general rule by which the musician is able to read the symphony out of the score, and that there is a rule by which one could reconstruct the symphony from the line on a gramophone record and from this again – by means of the first rule – construct the score, herein lies the internal similarity between these things which at first sight seem to be entirely different. And the rule is the law of projection which projects the symphony into the language of the musical score. It is the rule of translation of this language into the language of the gramophone record”. Ostwald's German edition has only: “4.0141 (Siehe Ergänzung Nr. 72)”.

Meaning as Use in the Digital Turn

ANAT BILETZKI, TEL AVIV

“In saying ‘When I heard this word, it meant to me’ one refers to a *point of time and to a way of using the word.*” (PI p. 175)

Introduction

In the spring of 1993 I undertook to demonstrate that the digital revolution now, that is, then, with us, while inventing new words with attendant new meanings and bequeathing new meanings to old words, precluded our familiar philosophical discourse on the meaning of meaning itself. When I embarked on writing that old, actually ancient, article in the spring of 1993 I used several illustrations – of both techno-talk and ordinary language in novel computer contexts. Half-a-year later I had to desert some of those examples – they were obsolete, or irrelevant, or had simply but literally disappeared. And then, for the next several years, in half-year intervals, I rewrote that article (calling it by various titles – but always retaining the theme of theories of meaning in the computer age). I finally relinquished the project, for I arrived at the realization that all I could do, all that was philosophically feasible, was to write an article on writing that article. For, in trying to show how our classical theories of meaning (the referential, the causal, the semantic, the pragmatic, the syntactic) could not be made to accord with the revolution in meaning now accosting us, I could only conclude that something deeply conceptual was going on: we could no longer, I concluded, formulate theories of meaning. Perhaps that is the inevitable ending of this contemporaneous discussion too.

Trying to delimit this conversation, its subject matter and theses, one may ask whether it deals with philosophy *of* digitization, philosophy *in* digitization, or philosophy *and* digitization; and one may answer, tentatively, that it is, indeed, a positing of questions in the philosophy of digitization. Also, strangely perchance, in doing such philosophizing, “we want Wittgenstein to help us do it.”¹ Here too, things must be delimited. This offering is not a reading of Wittgenstein on digitization (or computation, or mathe-

matics),² but rather Wittgenstein *for* digitization. That is to say, Wittgenstein, and specifically his time-honored “meaning as use,” will be appropriated in striving to make sense of the conceptual revolution alluded to by the modestly descriptive term – “digital turn.”

Another remark is called for, but now in the opposite direction of delimiting. While saying “digital turn,” for the purposes of the argument to be made shortly, one could just as well have pronounced on “computers,” meaning and referencing anything having to do with digitization. More specifically, the thoughts to be adumbrated here could be formulated concerning any of the numerous podia upon which the digital turn has taken place. We venture that they pertain to, and could have been noted about, e-mail alone, computer games alone, digital media alone, or the internet alone. It behooves those expounding on these subjects in technologically exact contexts first to differentiate between them and then to provide the lay reader with the lay of the land: how do internet and e-mail relate, what is the connection between computer games and internet, how does the move from windows-based applications to web-based applications impact our procedures and products, and so on, *ad infinitum* (with no facetiousness intended). Calling them all “digitization,” actors in the digital turn, is legitimate in the present case only because we are attempting to unearth an insight that pertains to them all equally, precisely because they are the platforms of digitization. Each and any of them will be allowed, in the present analysis, as representing the whole. Perhaps, and not unexpectedly, much of the discussion will revolve around the internet; yet this is not due to technological preference or expertise but to the worthy illustration supplied by the internet for most of the points made herewith.

A Conceptual Revolution

Think of a typical web-site, even a typical philosophy web-site. It sports two key traits which make the internet anticipatory of revolution: 1) a gargantuan mixing of subjects, or topics, or disciplines, or professions – “mixing” being a poor designation for intertwining and connecting, and 2) an accompanying plurality of means – “means” being a just-as-poor label for methods, venues and mechanisms – for reaching the disparate ends that dealings in these subjects posit. One could translate this talk of “key traits,” which involves such a plurality of themes, to more profound yet systematic constructs such as content and form, or subject and framework, or topic and

method, all the while being aware of the basics: that we are involved in the bringing together of several of the first with several of the latter. It is not just the multiplicity that is astonishing (with quantity and speed leading, say some, to a qualitative difference); it is the juxtaposition, both of several topics with one another or several means with one another, and of topics and means in crossings among them. The result is, I – not alone – submit, a conceptual revolution, no smaller in scope and significance than the print revolution or the industrial revolution.

This insight, or discovery, or supposition, or just plain statement – that we are in the midst of a conceptual revolution – is the basis upon which the ensuing conversation is built. It can, of course, be argued whether, and to what extent, this is a revolution at all,³ and then whether it is a conceptual revolution in particular. Without addressing such arguments explicitly here, I take a stand on, and for, one side by claiming that the acknowledgement of the revolutionary nature of the digital turn provides the context for our discussion and thesis. In more convoluted fashion let me also suggest the following inverted nuance: our “success” in describing the current goings-on of the digital turn, and our “failure” in formulating a theory of meaning for it, will buttress the posit of “revolution.” “Philosophy really *is* ‘purely descriptive’” (*Blue Book* 18).

Be that as it may, we are versed in speaking about historical revolutions and, by extension, economic, political, technological, or cultural revolutions. The digital turn comprises a *conceptual* revolution, and an exceptional one at that. Being a conceptual revolution it demands that we ask fundamental questions having to do with something seemingly deeper, surely different than technology, or commerce, or law. A conceptual revolution pushes us in the way of meanings – first, by compelling us to ask about the meanings of several old concepts and about the reference of many new terms. But this specific conceptual revolution then propels us forward to the more philosophical point, which may be thought of as a meta-meta-point. Not only does a revolution arouse questions of its immediate context (like questions about, in this instance, technology and technological culture); not only does a conceptual revolution provoke queries about both old and new concepts; but this very singular conceptual turn does something more *philosophically* revolutionary: it lays to waste our (old) theories of meaning, demanding either a fundamental restructuring of the old or a formulation of something new – a new theory, so to speak, of meaning. Unfortunately, however, it may perhaps pilot us – and this may remain an open question –

into despair concerning all theories of meaning, that is to say, concerning the very possibility of devising theories of meaning. In concrete analogy: a revolution may change the circumstances of, for instance, property; a conceptual revolution, often-times accompanying another revolution, will change the meaning of the term “property”; and this specific revolution, the digital revolution, asks of the meaning of many terms and concepts (including, by the way, that of “property”), but strikingly of the meaning of meaning itself.

The Use of *Meaning as Use*

What do we mean when we pronounce, here, “meaning as use”? Does the appropriation of that phrase and that icon – meaning as use – commit one to take a certain interpretative stance on what we have inherited from Wittgenstein as “meaning as use”? While not entering the interpretative conundrums, and specifically not engaging with the Kripkean perspective that takes us in the direction of skepticism (which is, in this context, tempting and surely promising), let us adopt, tentatively, the (mostly McDowellian) reading of following-a-rule, which posits normativity and objectivity as necessary in describing the use of a word as rule-governed.⁴ This ties together meaning as use with rules – “...you use it in such-and-such a way or according to such-and-such rules” (*PI* 74) – and with a community,⁵ as opposed to the private individual, following those rules. Such, then, are the rules of use which go into meaning.

Saying “meaning as use” and attempting to use this construct/theory/intuition/insight for understanding the vagaries of meaning in and because of the digital turn, one encounters several ways of (perhaps facile) adoption of “meaning as use” in computers that have come up in the research literature.

First, there is the currently popular intuition that overtakes and overdoes the turn to pragmatism and pragmatics, and from there to more subjectivist, relativistic theories of meaning in the philosophy of language, but also in philosophy at large. Although not solely addressed to the digital turn and its technologies, this talk of meaning tackles the problematics currently arising as a result of these technologies and their social, cultural, moral and political implications. What is eschewed in these fashionable philosophies of the new media are not only algorithms, computation, even logic, but systematicity as such in explaining meaning. Consequently, “meaning as use” has

become a catch-all for our inability to explain the ways of words in such turbulent conceptual – and cultural – times. The label of triteness may attach to this school not because I diverge from it in all ways (in fact, in the sequel I may be coming very close to it), but because I disagree with the tone of “anything goes” that it assumes. Meaning as use should be taken seriously, as prescribing a normative, objective conception of meaning. Call it constructive rather than destructive, if you will, although, again, our final conclusions might be less than happy.

Alternatively, there is the other observation – is it trite as well? I think not – that signs are there to be used, and in its wake the understanding that a certain functional description of these signs, especially in computer languages, is necessary for their deployment. This may be, and is sometimes, called functionalism, but it is not really meaning as use. In this school we come across sophisticated computational theories that attach the title “meaning as use” to formalized computer languages when speaking about networks, randomization, etc., assuming that the non-linear and more complex systems they develop are instantiations of use precisely due to their complexities. Similar and parallel to these are the suggestions of meaning pertaining to computer use that are based on behaviorism and procedural semantics. In other words, what we encounter in all these cases is an acceptance of the computational version of mind affixed, in an admittedly non-naïve manner, to “meaning as use” as an accommodating title for complexity, nuance, and a touch of humanism. This makes sense in the ordinary-language sense of “use”, but is not a very Wittgensteinian “meaning as use”.

There are, to be sure, some allusions to “meaning as use” within the context of the information industry and economy (rather than society) that can be perceived as taking meaning as use studiously. One such occasion (Governor 2003), for example, is a comment made in a professional, web-based conversation, which accepts and develops the thought that concepts get their meaning through community use. Understanding that “meaning can emerge from behavior” (rather than be there for the use/behavior), it capitalizes on the ability of the internet to monitor behavior, thereby developing a framework which can accommodate rule-change as a result of diversity of behavior. Both rules and community receive the proper theoretical treatment, rendering the meaning of the concepts introduced as essentially deriving from their use within the system. Another illuminating example (Reimen 2005) conscripts Wittgenstein to elucidate the exact machinations of information-management as essentially use-dependent –

once more, not as a follow-up to information “being there” to be used, but rather as supplying the information with meaning, indeed, making it information only via its use. And again, as in the case above, this use is both rule-governed and community based.

Novel Use

What are we attempting to formulate and pinpoint? Where are we trying to go? To a thought about our workings with words and concepts under the auspices of digitization that anchor the meanings of those words and concepts in use. This does not mean locating, first, the reference of terms and then purporting to explain how they are used, when they are used, by whom and for what purpose. As Wittgenstein tells us: “One has already to know (or be able to do) something in order to be capable of asking a thing’s name” (*PI* 30). Furthermore, if one is to remain Wittgensteinian, that is to say, if one is to employ “meaning as use” as a Wittgensteinian contribution, this involves the additional Wittgensteinian matters of rule-following and community of practice – in other words, a denial of private language or of an individual wielding meaning alone, whether internally or externally – in the essential framing of our questions.

But what words? Which concepts? It is not difficult, indeed, it seems to be an almost automatic feat, to list those terms and concepts that have emerged either as newly articulated words or as words changed and changed anew with the digital age. Think of those new-fangled words which have become staples of ordinary language in the digital world: internet, interactivity, interface, multimedia, cyberspace, database, connectivity, hypertext, blog, web. Then consider some concepts – here the list is daunting – that have changed in meaning, such as property, exchange, copyright, privacy, seller/buyer, speaker/audience, space, time, song, music, book. Finally, add some other words, whose very change is implicated by their digital self-reference: communication, community, information, artificial intelligence, network, computation, machine, memory, and even that most nondescript of words – search.

“We must focus on the details of what goes on; must look at them *from close to*” (*PI* 51). In order to understand these novelties, in order to grasp their meaning, one must go the Wittgensteinian way of describing the use of words and concepts. What can be said about each of them can, in a way, be extrapolated immediately to any other. In a way – the way of focusing on

the details of their use from close up. Beyond thereby telling simply of their meaning, such an account, never an explanation, of their uses would be, intentionally, exposing the hinges upon which a theory of use hangs: no clear and transparent representation, but rather context dependency, following-a-rule, and community. Importantly, however, this exposure would also unearth the depths of the changes we are now coming upon – not only of meanings but also of these scaffoldings of meaning as use. So the examples of communities that use these concepts are not necessarily the old, social, anthropological communities that we were acquainted with in our traditional anthropological studies; instead we have communities defined by the ways and purposes for which they use the internet. The examples of rules would reveal novel, sometimes unfamiliar rules, with a new, almost indescribable preponderance of rapid rule-change. And if context be minimized, for a moment, to place and time, we would discover fresh references to unfamiliar places and strange times, indeed “locations” which hardly merit the nomenclature of “place” or “time”.

Naturally accompanying such descriptions of use in the Wittgensteinian context is the question of how we learn these innovative uses. Reflect, then, on how children today use computers and more so, how they learn to use them. As recently as twenty years ago computer-programming schools were giving courses – out of school, extra-curricular courses – for children who wanted to learn how to play computer games, how to solve computer problems, and finally, for older children, how to write computer programs. But looking at children of today, watching how they play computer games, work their mobile phones, operate visual and audial media, engage with others on the internet, design web-sites, and even take on financial and commercial enterprises, one cannot but be struck by how un-didactic their learning has become. This is not to say, however, that there are no *rules* of use; it is only to say that these rules are not necessarily taught *a priori*, before the use, in order that a child may learn to apply them to the digital technology at hand. On the contrary, true to Wittgenstein’s somewhat convoluted rendering of the relation between a rule and its application, it is now apparent that understanding the rules consists in knowing how to apply them rightly and (what is considered) wrongly;⁶ subsequently, it is the use itself that teaches. I have asked several children to explain what they are doing, not only when they engage in what may seem to be semi-automatic activities like computer games or SMSs, but even when they undertake advanced digital projects that require what may seem to be theoretical,

computational know-how. Almost invariably these children proclaim, explicitly, that they cannot “explain” what they are doing (algorithmically or systematically). They so often fall into the Wittgensteinian “this is what I do” (*PI* 217).

Meaning as Use of Meaning

Meaning as use, when used by Wittgenstein, coincides with his admonition that we describe rather than explain or theorize, that we look rather than think, that we amass human behaviors in order to understand – perspicuously – that which we, or others, do. Asking about, and then describing, the regular, but also the irregular, behavior of using a word is sufficient for understanding it – i.e., for achieving its meaning. But we now climb up an additional step to the proposal that not only have certain words and concepts been subject to a change in meaning, but that meaning itself, the search for it and its determination, have undergone a substantial transformation.

What does a Wittgensteinian do when looking for the meaning of a word? She looks at and listens to its use. The current, digitally aware Wittgensteinian, however, can google the word – and encounter far more uses than any that were conceivable before the digital age. This is, initially, a quantitative leap in the *number* of uses, and we need not belittle quantity since it has a relevant effect on the human ability to use a word. Still, there is an undeniable qualitative aspect here in which we are also directly immersed. Not only do we encounter an extended list of uses – but these uses propel us, immediately, to other uses (by links to links); these uses have no categorical limitations or disciplinarian attachments; these uses do not abide by any hierarchical order (except, of course, the algorithm which google uses, about which we are constantly inundated with hints); these uses do not easily, or even complicatedly, obey a criterion of relevance; these uses may be routine or exceptional; these uses may be repetitive or surprising. Finally, and there’s the rub, the encounter with these uses changes from day to day, changing not only the “list” of uses but the encounter itself. In other words, any attempt to describe the use of a word is fated to succeed only temporarily, giving way in a matter of hours, days, at most weeks, to different descriptions, i.e., different uses, i.e., a different meaning. I’m gesturing here at what I exclaimed at the beginning: the

meaning of a concept may change daily if its meaning is its uses. This may be fascinating, yet it is a straightforwardly anticipated point. But our procedure of searching for, finding, and finally describing the uses which encompass meaning has changed as well. That is to say, our access to the use of words has been radically altered. And that is to say that the meaning of “meaning”, if dependent on use, has, itself, undergone revisions of a deeply transformative, sometimes seemingly transitory, type.

How has this happened? This is not a technological question— for that we have technological expertise — but rather still the Wittgensteinian one. How have the rules of use of words — their grammar — been capable of allowing such inordinate changes? Where is the community within which these rules operate? And closely related, what can we say about the authority that makes the rules and that decides their manner of application? For Thomas Hobbes, the meaning of (certain) words were decided by the political sovereign; for certain professional communities the meanings of a specific terminology are given to experts; for children, parents, who are the sovereigns of the family community, are meaning-giving authorities, at least insofar as they teach the meanings of (certain) words. Wittgenstein’s favorite authority is “We”, we who participate in a community and who share a form of life.⁷ Clearly, Wittgenstein’s emphasis on use entails the authority to use words according to rules, but this authority is invested in us all, in all who use words. In fact, there is a turnaround involved: it is the use itself which provides the internal, so to speak, authority (rather than any external such) for a certain use, i.e., for giving a certain meaning. And, indeed, there is no mention in Wittgenstein of specific authorities being more or less legitimate in laying down proper usage.

All that being said, however, we cannot ignore our extra-Wittgensteinian knowledge of the ways of the world — of who writes, who reads, who speaks, who censors, who controls media, and who exercises power. The “who’s” of such control over words, traditionally perceived as political, social, economic, military, or even sometimes intellectual aristocracies, have given way in/after the digital turn, to...to who? Use, i.e., meaning, is no longer solely determined by such long-established elites, or definitely less so, but rather by a myriad of users of digitization, users of internet and mobile communication, users of accessible media producing accessible products and services, at any given time in countless places. True, we are still witness to the powers that be who can and do control these machines. We also cannot deny that, interestingly, the powers that be who do control

the machines are no longer, or not necessarily, political (states), but rather financial (corporations). And it is almost old hat, by now, to speak of the digital divide. Nevertheless, and notwithstanding all these caveats, we are now in the throes of massive participation in the information society, spawning considerable influence, management, control and change over far more than information – rather over the very meanings of the use of words in this society.

Epilogue

A final note is called for, almost an aside, which hopefully leads to a more meaningful question. In a recent conference on philosophy of law and society,⁸ people alluded often to Wittgenstein. He was “used” – abused? mis-used? – for tracts and debates on the law and on political and social issues by reference to following-a-rule, to particularity, to language-games, to family resemblance, and yes, to meaning as use. This use of Wittgenstein presents us with a fundamental quandary: If Wittgenstein’s “theory” of meaning as use is acknowledged as being correct, then it can be allowed to do work for the language-games of law, for the religious form of life, for the language of science, for literary experiences, i.e., for any language, and for all the different language-games, that we engage in; the digital milieu becomes, then, just one more well-defined context of language use. This is a fundamentally strong position but it harbors no novelty. Simply put, if we can bring “meaning as use” into play to explain meaning, all meanings, there is no reason to portray those emerging from and in the digital turn as in any way exceptional. The other side of the quandary, the one opined and preferred by the present exposition, holds – in perhaps a startlingly non-Wittgensteinian stance – that it is not absolutely compelling that one must adopt meaning as use as one’s favored theory of meaning. In that case, however, using meaning as use presently for the elucidation of meanings in the digital turn – that is to say, accepting that there has been a noteworthy turn in meanings here, not just an addition of another language or language-game – is more significant. It is precisely because the digital turn has provided and challenged us with a new behavior of meaning that we can make sense of it only, and only of it, via meaning as use. That is what is meant, verily, by calling it a *conceptual* revolution.

There is, nevertheless, a final reservation. It is said and almost-consensually agreed upon that Wittgenstein did not offer us theories – of meaning or any other philosophical issue (theories belong only in science) – and additionally, that he supplied us with the grounding to shun all philosophical theories. We do not here enter this profound fray beyond expressing a basic agreement with this reading, coupled with some unease. But, paradoxically perhaps, it is precisely this reading of “meaning as use” – not as a theory of meaning but as a Wittgensteinian way of letting us see, perspicuously, what meaning is – that is so appropriate to the conceptual revolution now with us. Let us put it another way: had this article been presented a year ago its tone would have been more congratulatory, more optimistic in anticipating the state of things to come in matters of global communication, mobile novelties, networked communities, digital education, medical inventiveness, and countless other applications of concepts aided by the promulgation of use, as it has been described above. Asking what makes the use of words in or after the digital turn different or singular, asking what gives them meaning, lets us see how only meaning as use can explain the positive emergence and change of meanings. It can just as well, however, describe the negative dissipation and chaotization of meanings. For such a rendition, “meaning as use” need not, indeed, be a *theory* of meaning. “A main source of our failure to understand” says Wittgenstein, “is that we do not *command a clear view* of the use of our words...A perspicuous representation produces just that understanding which consists in ‘seeing connexions’...[this] is of fundamental significance for us. It earmarks the form of account we give, the way we look at things. (Is this a ‘Weltanschauung’?)” (*PI* 122). So turning to, describing, our digital use of words does not mean formulating a new theory of meaning; it merely shows us our current world-view – and this means showing that we are in the midst of a conceptual revolution, be it one of happy proliferation of meanings (some might say “hype”), or one of wild loss of control over the meaning of meaning.

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Notes

1. The context of this article being the Wittgenstein conference in Kirchberg (2007) devoted to the theme of “Information Society,” it is legitimate to ask about the fit, at most, or any relation, at the least, between Wittgenstein and that theme. These words were voiced by the organizers of the conference in their attempt to clarify that fit/relation.
2. Such renderings of “Wittgenstein on mathematics” are myriad, are more uncommon in addressing Wittgenstein on computation, and are relatively rare for the case of Wittgenstein on digitization.
3. I owe these misgivings to comments made by Andrew Frank, and several others, who have pointed out that the digital turn is an incremental technological development that, even while ushering in great changes, is not revolutionary.
4. We do not engage here with the discussions on rules and their known, attendant qualifications.
5. “Community” is a term fraught with associative tensions. I use it here, and in the sequel, as we have been using it in the Wittgensteinian community – i.e., as inhabiting the analytic opposite of “private individual.” There are other mostly social and cultural implications of “community” that are not brought to bear here, but that might complicate my reading, if taken seriously. Furthermore, it is not clear what Wittgenstein means by the rarely used “community.” I thank Elisabeth Nemeth for awakening this.
6. See e.g., Wittgenstein, 1956, 331.
7. This insight is more serious than the colloquial “we,” used indifferently and with no conscious commitment by most of us. Stanley Cavell has given it intuitive, literary, and mostly Wittgensteinian grounding (“Must We Mean What We Say?”, Cavell 1969).
8. The XXIII World Congress of Philosophy of Law and Social Philosophy, Cracow, Poland 2007.

Wittgenstein 2.0: Philosophical Reading and Writing after the Mediatic Turn

JOS DE MUL, ROTTERDAM

Wir sind aufs Glatteis geraten, wo die Reibung fehlt, also die
Bedingungen in gewissem Sinne ideal sind, aber wir eben deshalb
auch nicht gehen können.

Ludwig Wittgenstein

Glattes Eis,
ein Paradies für den,
der gut zu tanzen weiß.

Friedrich Nietzsche

Introduction¹

‘Although Wittgenstein is widely regarded as one of the most important and influential philosophers of this century, there is very little agreement about the nature of his contribution. In fact, one of the most striking characteristics of the secondary literature on Wittgenstein is the overwhelming lack of agreement about what he believed and why’. These are the opening words of David Stern’s article ‘The availability of Wittgenstein’s philosophy’ in *The Cambridge Companion to Wittgenstein* (Stern 1996, 442). In his introduction to the same volume, Hans Sluga even proposes that our fascination with Wittgenstein might be ‘a function of our bewilderment over who he really is and what his works stand for’ (Sluga 1996, 1).

There are several reasons for this disagreement. In the first place, Wittgenstein’s writing is ‘extraordinarily compressed’ (Anscombe 1996), sometimes inconsistent, and not seldom even obscure. The fact that many of the English (and other) translations are questionable and often reflect much

interpretation on behalf of the translator also has caused much confusion and debate. The circumstance that Wittgenstein's later philosophy in several respects opposes the views he expressed in the *Tractatus Logico-Philosophicus*, didn't contribute to the consensus among Wittgenstein scholars either. Next, his writings hardly have a linear character. This already applies to the *Tractatus*, which, rather than a deductive argument, consists of 'a fabric where everything is connected with everything else' (Stenius 1996, 15). It is even more true for the later works. As Stern remarks, the characteristic unit of Wittgenstein's writing was not the essay or the book, but the remark (*Bemerkung*) and as a result, his oeuvre consists of multiple series of interconnected philosophical questions, personal observations, jokes, parables, and propositions (Stern 1996, 444). Moreover, and connected with this, apart from the *Tractatus* and one short article on logical form, Wittgenstein never managed to settle on a form for the publication of his writings. His *Nachlass*, consisting of some 20.000 pages, is a work in progress, a baffling collection of drafts, variations and revisions. For all these reasons, Stern concludes that for many Wittgenstein scholars his writings are a mirror which mainly reflects 'their own thinking' and much of the interpretation is really a discussion of other interpreter's readings, resulting in a secondary literature that has taken on a life of its own. (Stern 1996, 443).

I do not have the ambition to tell 'who Wittgenstein really is and what his works stand for'. However, from a mediatic perspective, I hope to shed some light on what we might call the hypertextual form of Wittgenstein's oeuvre and to give some suggestions how we could deal with its bewildering appearance. Following McLuhan's maxim that the medium is the message, I will argue that the proto-hypertextual form of Wittgenstein's later work not only invites another kind of reading, but also suggests another interpretation of the *Tractatus*. This might help us to re-mobilize Wittgenstein's philosophy in the context of the present informatization of the worldview. My thesis is inspired by a series of articles by Kristóf Nyíri and Herbert Hrachovec, dealing with Wittgenstein's relationship to secondary orality and with the electronic edition of the *Nachlass* respectively. Though my argument will take a different direction, their publications prepared the ground for the claim I defend in this paper.

The paper consists of four sections. In the first section I will briefly introduce the mediatic turn that informs my approach and will also make some remarks on Wittgenstein's contribution to this turn. In the second section, I will discuss Nyíri's claim that the genesis and direction of Wittgen-

stein's later philosophy is connected with the emergence of secondary orality. Although I agree with Nyíri that we should regard the form and style of Wittgenstein's later work in connection with his critique of the Platonic culture of the book, I will defend the thesis that Wittgenstein was not so much – as Nyíri argues – on his way back to an oral culture, but that he – intentionally, unintentionally or perhaps even contrary to his conscious intentions – was struggling his way into a new, post-literate way of thinking and writing. In the third section I will argue that this claim finds (unintended) support from the *Bergen Electronic Edition of Wittgenstein's Nachlass*. Herbert Hrachovec has argued that, given the transitory nature of Wittgenstein's *Nachlass*, an electronic version is more suitable to disclose the proto-hypertextual nature of this oeuvre than a traditional book publication. However, connecting with the development of the Web 2.0, I will argue that this Bergen edition is only a half-hearted starting point to do so. In the fourth section, regarding a specific development in Wittgenstein's remarks on the possibility of 'thinking machines', I will argue that a mediatic re-reading of the *Tractatus* might not only help us to understand the database ontology that underlies the philosophy of the later Wittgenstein, but also to disclose the *Nachlass* accordingly.

1. The mediatic turn

In the last decade 'media philosophy' (*Medienphilosophie*) has entered the philosophical arena. According to one of its proponents, Reinhard Margreiter, this name refers not only, and not even predominantly, to the exploration of yet another ontological domain, but rather designates a fundamental transformation of philosophy itself, which is characterized by a turn towards (the descent and history of) the mediatic foundations of philosophy. In his view, media philosophy might become a contemporary '*prima philosophia*' (Margreiter 2003, 151). However, Margreiter does not argue for a modernist kind of foundationalist superdiscipline, but rather for a critical discourse that has to accompany every act of knowing.²

Though the name 'media philosophy' is a recent invention, the phenomenon is not altogether new. Already in Plato's *Phaedrus* and *Seventh Letter* we find fundamental reflections on the impact of writing on philosophy, that is: on the type of oral philosophy that precedes written philosophy and which is still reflected in the dialogical form of Plato's writings. However,

in the tradition of Western philosophy, which is strongly connected with the book, this kind of reflection remains relatively scarce and marginal for a long time. Starting from Parmenides' identification of being and thinking, a dominant part of the metaphysical tradition was based on the presupposition that thinking and being – *nous* and *physis* – share the same form (*eidos*, *morphe*), guaranteeing the identity of what can be thought and what can be (Allen 2004, 218).

Kant's transcendental philosophy can be regarded as the first radical critique of this metaphysical equation of thinking and being. According to Kant there is no immediate and absolute knowledge of reality, because it depends on the finite *medium* of the human faculties of sensibility, understanding, and reason. However, as Kant deems this medium to be timeless and shared by all human beings, he still could adhere to the notion that the phenomenological world constituted by this medium, is something that has empirical objectiveness and as such is open to scientific explanation, prediction and control. In post-kantian philosophy two further developments can be distinguished that together have resulted in what might be called 'the mediatic turn' in modern philosophy.

The first of these developments has to do with the *historization* of human reason (cf. De Mul 2004, 97-125). After Kant the idea emerged that human reason is not a timeless entity but something that develops in – natural and historical – time. Whereas in Hegel's philosophy this historization was still regarded as a process in which Absolute – that is: suprahistorical – Reason finally becomes conscious of itself (and in this sense returned to a pre-kantian metaphysics), in the hermeneutical tradition – starting with Dilthey and radicalized in Heidegger and his post-modern heirs – the emphasis gradually shifts to the finiteness of human experience.

The second development in the post-kantian philosophy I refer to is what might be called the *externalization* of human reason. It is connected to the realization that the thinking of being always requires an external medium. Already Herder and Von Humboldt emphasised both the crucial role language plays in thinking, and the non-transparency of this medium. In the continental tradition it was again in the hermeneutical tradition – to which we might include Nietzsche, who blamed grammar for our belief in God³ – that this insight was developed further.

In the analytical tradition this development took place in the so-called 'linguistic turn' (Rorty 1967). This turn was accompanied with the 'belief that the problems of philosophy may be solved or dissolved either by

reforming language (the advocates of this were dubbed “ideal language philosophers”) or by a better understanding of the language we actually use (“ordinary language philosophers”)’ (Hacker 2007). Wittgenstein played a crucial role in both manifestations of the linguistic turn.⁴ In the mainstream interpretation of Wittgenstein – sketched broadly enough to abstract from the many disagreements – Wittgenstein in the *Tractatus* held that ‘the sentences of our language, fully analyzed, necessarily reflect the metaphysical form of the world’ and that ‘all philosophy is a critique of language’ (Hacker 2007). However, in his belief in the correspondence between being and the logical form of language, Wittgenstein – in spite of his radical restriction of meaningful language to elementary and complex propositions of science and his critique of every philosophy that pretends to go beyond these propositions – remained a victim of Platonic metaphysics. In his later writings – I am still sketching the mainstream interpretation – Wittgenstein criticized his earlier position and developed a therapeutic philosophy which aimed to dissolve philosophical problems by analyzing the many confusions that characterize our ordinary language.

What distinguishes recent media philosophy from the earlier continental and analytical approaches is the fact that its scope goes far beyond the linguistic domain. Inspired by the emergence and impact of new media such as radio, film, television and the computer, and by the work of otherwise diverse thinkers such as Cassirer, Langer, McLuhan, Ong, Goodman and Derrida (to mention a few), the mediatic self-reflection has been extended to (the symbolic and material dimension of) all cultural media of experience. In this ‘mediatic turn’ the development of computer mediation has become a central topic. One of the reasons for our fascination with computers is that with the development of artificial intelligence the externalization of human reason seems to enter an entirely new phase, which in its radicality perhaps can only be compared to the externalization of thinking in writing, several millennia ago.

In the following I will elucidate this point, as it constitutes a fruitful starting point for a mediametic interpretation of Wittgenstein.

2. Wittgenstein: a philosopher of secondary orality?

One of the crucial claims of media philosophy is that the content of philosophy cannot be abstracted from its mediatic form. Walter Ong’s book *Orality*

and Literacy provides us with a good example of this claim, as he connects Plato's philosophy with the emergence of writing (Ong 1982). Elaborating the work of McLuhan (McLuhan 1962) and Havelock (Havelock 1963), Ong argues that Plato's doctrine of Ideas reflects the transformation from oral to written philosophy. Whereas in oral communication language signifies in many different ways (e.g. to command, question, pray, etc.), in the medium of writing words basically signify by designating something. Moreover, because writing abstracts words from the concrete context in which they are used in oral communication, it creates the illusion that the same words always designate the same abstract objects. For that reason Ong argues that the practice of writing gave birth to Plato's eternal and essential Ideas. Hence the structure of the dialogues: again and again Socrates challenges his opponents to make the transition from the manifold uses of a word to its essential meaning.

It is remarkable that Plato does not seem to be fully aware of the role of the medium of writing. It is not without irony that when he explicitly discusses writing in the *Phaedrus* and the *Seventh Letter* he is severely critical of the new medium of writing, because in his view writing deprives man from his most valuable faculty: the art of memorizing that characterizes oral culture and living dialogue. The least we can say is that Plato shows a certain ambiguity towards writing, which is expressed in the dialogical form of his writings.

In 'Wittgenstein as a philosopher of secondary orality', Kristóf Nyíri presents the intriguing thesis that we should interpret the form of Wittgenstein's later writings in the context of his critique of Plato's essentialism. Nyíri points out that in 1931 – during a crucial period in the development of his later philosophy – in his notebooks Wittgenstein refers to Plato at least eleven times, quoting often quite lengthy passages that 'belong to those where Plato's path from a specific view of meaning to a specific ontology becomes particularly clear' (Nyíri 1996/1997). According to Nyíri Wittgenstein was fascinated by these passages because he 'obviously had a feeling that that the point in history of philosophy to which he wanted to return is the one at which Plato had taken the wrong turning' (idem).

To underpin his interpretation Nyíri puts forth a passage from Plato's *Euthyphro* in which the protagonist is forced by Socrates to proceed from giving examples of holy acts to their essential aspect, by which all holy acts are holy,⁵ to a passage of the *Philosophical Investigations* in which Wittgenstein goes exactly in the opposite direction: from the essence of a lan-

guage game to the view that the different instances of a particular language game 'have no one thing in common which makes us use the same word for all'.⁶ Although we do not find these passages juxtaposed in Wittgenstein's *Nachlass* itself, Nyíri rightly claims that Wittgenstein was aware of his reversal (*Umdrehung*) of Platonism, as in the same year (1931) he writes to Schlick: 'I cannot characterize my standpoint better than by saying that it is opposed to that which Socrates represents in the Platonic dialogues' (MS 302:14).⁷

According to Nyíri, Wittgenstein was inspired to his reversal of Plato by his experience of the phenomenon of 'secondary orality'. This term, coined by Walter Ong, refers to the new media that emerged in the twentieth century, and in which orality again played an important role, such as film, radio and television. Ong calls this kind of orality 'secondary', because, although it resembles primary orality as we find it in preliterate cultures in many respects, at the same time it has recourse to writing and book printing. After all, the spoken texts we hear when listening to the radio or watching a movie or television, often have been written down before they were spoken. Nyíri remarks that Wittgenstein was almost addicted to going to the movies and that he often used the film to illustrate his philosophical points (Nyíri 1996/1997). This should be no surprise, as the spoken words in the then new sound-film – or 'talkies' as they were named – made Wittgenstein realize the different uses of language beyond mere designation.

Nyíri also connects Wittgenstein's style of writing with secondary orality: 'Although he was an obsessive writer, Wittgenstein had a problematic relation to written language, especially to written language in its fully developed form: the printed book. Already in the preface to his *Wörterbuch für Volksschulen*, compiled in the early 1920s in the course of his activity as an elementary school teacher in Lower Austria, Wittgenstein had complained about the distorting effects of typography; and his reluctance to *publish* his writings is of course notorious. Here also comes to mind his poor orthography; his anachronistic predilection for having people read out loud texts to him; the common observation that his favourite readings he really knew by heart; the aphorism and the dialogue as conspicuous stylistic features of his writing; and even his tendency to explain arguments by using pictures and diagrams' (Nyíri 1996/1997).

At this point I would like to make two connected critical remarks with regard to Nyíri's argument. The first starts with the question whether it is adequate to call Wittgenstein, as Nyíri does in the title of his article, 'a phi-

losopher of secondary orality'. Though Nyíri's claim that Wittgenstein was inspired by the emerging secondary orality is convincing, with regard to the *Nachlass* we should rather speak of a secondary *literacy*. After all, Wittgenstein's *Nachlass* does not consist of a series of talks that has recourse to writing, but, on the contrary, it is a new kind of *writing* that has recourse to spoken language. Moreover, as Nyíri himself notices, Wittgenstein never gave up writing, but obsessively and gradually desperately tried to publish his writings in the form of a printed book. On December 4, 1946 he writes in his notebook: 'Ich hätte gerne ein gutes Buch hervorgebracht, ja ein sehr gutes; aber es ist nicht so ausgefallen; und die Zeit ist vorbei ...' (MS 133, 145).

My second remark concerns the apparent Hegelian ring of Walter Ong's concept of 'secondary orality', which also affects Nyíri's interpretation. In Ong's account of the history of the media, secondary orality functions as a Hegelian synthesis between orality and literacy, a synthesis in which thesis and anti-thesis are being elevated (*aufgehoben*) to a higher state in which both are negated yet fully contained. Ong's master story thus recounts the dialectical 'triple jump' that leads from an original paradise (Orality), via a stage in which this paradise is lost (Literacy) into the regained paradise of Secondary Orality. However, in doing so, Ong seems to overlook those medium-specific aspects of new media that go beyond both orality and literacy, and that make them into an altogether qualitatively new stage in the development of media. We can think, for example, of the principle of montage that characterizes the medium of film. And when these new media become computer-mediated and integrated in networks such as the Internet, we definitively enter a qualitatively new stage in the development of the media. In the case of Ong, who published his book in 1982 – only one year after IBM introduced the personal computer –, we must excuse him in so far as he wrote this book before the massive breakthrough of the new information and communication technologies. However, Nyíri wrote his article in 1996 at a time that the contours of the Information Age already had become clear. Although he even mentions 'the electronic recording of texts and data' he does not reflect on their relevance for a mediatic interpretation of Wittgenstein's *Nachlass*.

The thesis I want to defend is that Wittgenstein was not so much on his way back to orality, but rather was attempting to go beyond the printed book in the direction of hypertext. Referring to Plato again, one could say that Wittgenstein not so much aimed at a *reversal* of Plato, but rather at an *twisting out* of Platonism.⁸ Given the fact that the culture of the book inevi-

tably brings along the kind of essentialism Wittgenstein attempted to overcome, his inability to give his post-*Tractatus* writings the shape of a book cannot be simply reduced to psychological reasons (such as his perfectionism), but has its ground in the medium he employed.⁹ However, though Wittgenstein shows a strong affinity with the practices of oral culture, he might have realized that a return to an oral culture is no option. Rather – intentionally, unintentionally or perhaps even contrary to his conscious intention – he was in search of a new, post-literate way of writing.¹⁰

There are several passages that suggest that Wittgenstein hints at such a new way of writing. On the one hand we find quite a few remarks in which Wittgenstein complains about the constraints that linear writing forces upon him. For example, on September 15, 1937, he notes: ‘Wenn ich für mich denke ohne ein Buch schreiben zu wollen, so springe ich um das Thema herum; das ist die einzige mir natürliche Denkweise. In einer Reihe gezwungen fortzudenken ist mir eine Qual. Soll ich es nun überhaupt probieren?’ (MS 118: 94v). At the same time he is thinking of a way out. For example, one day later, in a concept for the preface of the *Philosophical Investigations* he writes: ‘Dieses Buch besteht aus Bemerkungen die ich im Lauf von 8 Jahren über den Gegenstand der Philosophie niedergeschrieben habe. Ich habe oft vergebens versucht sie in eine befriedigende Ordnung zu bringen oder am Faden eines Gedankenganges aufzureihen. Das Ergebnis war künstlich und unbefriedigend, und meine Kraft erwies sich als viel zu gering es zu Ende zu führen. Die einzige Darstellung, deren ich noch fähig bin, ist die, diese Bemerkungen durch ein Netz von Zahlen so zu verbinden, daß ihr, äußerst komplizierter, Zusammenhang sichtbar wird. Möge dies statt eines Besseren hingenommen werden,— was ich gerne geliefert hätte’ (MS 118: 95v).

It is not easy to resist the temptation to interpret Wittgenstein’s reference to ‘a network of numbers’ that would make the ‘extremely complex connection’ of his remarks ‘visible’ as a prefiguration of hypertext. In order to test this claim, let us examine the ‘Wittgenstein Wide Web’ in more detail.

3. Electrifying Wittgenstein

In his review of Volume 11 of the *Wiener Ausgabe* of Wittgenstein’s *Nachlass*, David Lauer described the ‘20.000 Seiten umfassendes Gewebe’ of

Wittgenstein's legacy as 'der Traum jedes postmodernen Texttheoretikers, aber der Alb eines aufrechten Herausgebers' (Lauer 2001). Von Wright's first account of 'The Wittgenstein papers' in 1969 already made clear that this is by no means an exaggeration. The *Nachlass* contains dozens of manuscripts, typescripts and dictations (Von Wright 1969). The chronology is not always clear, because Wittgenstein did not date all of his writings and remarks, often worked at several manuscripts and typescripts at the same time, or returned to earlier texts to revise or supplement them. Moreover, the material is quite repetitious: many remarks are variations of other remarks, and many manuscripts are rearrangements of earlier series of remarks. Often the remarks contain alternative formulations without any clue which of them has his preference. And when Wittgenstein dictated from the manuscripts to a typist, he often kept altering the sentences, adding new ones, and changing the order of the remarks. Usually he continued to work on the typescripts, for example by cutting up the typed text into fragments (*Zettel*) in order to rearrange them again as a basis for new typescripts.

Although one cannot but admire the efforts of Von Wright and the other trustees to publish the *Nachlass* as a series of books, it is clear that all of these have been the result of often quite arbitrary editorial decisions. In many cases these decisions not only concern the title, but also the selection and the arrangement of the remarks. Even in the rare cases where Wittgenstein himself prepared the publication, as with the *Philosophische Untersuchungen*, the published text 'is only one of a number of possible arrangements Wittgenstein proposed, many of which extend, amplify, or cast light on the remarks in the published book' (Stern 1996, 449).

Given the complex nature of Wittgenstein's *Nachlass* and the arbitrariness of the books edited by the trustees, the need for a critical edition of Wittgenstein works soon became apparent. In the mid-seventies, Michael Nedo, supported by the trustees, started the preparation of such an edition in Tübingen. Due to all kinds of quarrels and delays, Nedo finally only got permission to publish the manuscripts and typescripts from 1929 to 1933. From 1994 on a series of volumes has appeared. Like any critical edition, this ambitious undertaking aims at representing the originals as accurately as possible, and supplementing them with sophisticated philological tools. However, in the case of Wittgenstein's *Nachlass*, it is hardly possible to present the *Nachlass* as what it actually is: an ongoing process of creative writing and revision. Although the *Wiener Ausgabe* includes separate vol-

umes with indices and synopses that enable the reader to look for the occurrence of a word, or consult a table of correlations of textual segments, he cannot simultaneously look for the occurrence of a work *and* the history of rearrangements of the paragraph it is included in. ‘It seems next to impossible to combine indexing and synopsis. [...] No one would finance a series of books (or care to use them) containing the astronomical number of relations between index entries and changes of contexts in gory detail’ (Hrachovec 2000).

Hrachovec utters this critique in his article ‘Wittgenstein on line / on the line’, in which he compares the *Wiener Ausgabe* with the *Bergen Electronic Edition* (BEE)¹¹ of the *Nachlass*, and it is not surprising that he continues by stating that in an electronic edition such searches are quite easy: ‘Since words are encoded by numbers it is quite simple to set up an index and it takes just another couple of numbers to represent the trace of ‘words’ to and from given contexts. Much of this can be done automatically; there is no need to actually visualize the necessary relational apparatus. If a correlation seems interesting it can be called up at will, with no time lost for browsing, copying or shuffling around papers’ (idem).

The fact that the *Nachlass* consists of relatively small text units that are arranged in ever new recombinations, as well as the role played in this corpus by non-linguistic elements such as music, film, pictures and diagrams, makes it tempting to claim that Wittgenstein’s *Nachlass* invites or even demands hypertextual treatment. Nowadays, television sets are often advertised as being ‘HDTV ready’. In the same sense we could say that the *Nachlass*, thanks to its inherent ‘database ontology’, is already prepared for digital hypertext. It has – just like for example Raymond Queneau’s *Cent mille milliards de poèmes*¹² – proto-hypertextual characteristics that only work out completely in an electronic environment.

Without doubt the BEE, consisting of facsimiles of every page of the *Nachlass*, suitably linked to diplomatic and normalized versions of its content, has many advantages over the *Wiener Ausgabe* when it comes to multiple accessibility and search possibilities. Thanks to special search templates, the reader can search for words and combination of words in the entire corpus, in specific groups, such as manuscripts or typescripts, or in single items. The scope of the search can be narrowed by restricting the search to specific time intervals. Boolean operators, wildcards and proximity searches further expand the range of possibilities. Moreover, it is possible to search for logical, mathematical, set-theoretical and musical nota-

tions or for words in other languages and one can even search for words that for privacy reasons were written by Wittgenstein in coded text. Thanks to this scholars can execute searches through the entire corpus of the *Nachlass* that took traditional ‘book scholars’ days if not weeks in a couple of minutes. Moreover, the BEE not only simply extends the established tool-set of textual scholarship, but it opens up completely new ways of reading and writing. For example, in addition to the traditional ‘chronological’ reading of a text, the electronic version invites the scholar to follow the ‘hyper paths’ that his searches present on the screen and it is not unthinkable that scholars that grow up with electronic versions of texts even prefer such ‘hyperlogical’ readings. And the possibility to insert annotations and links (by saving searches) may become a new standard for secondary literature. As Hrachovec claims, this opens a completely new set of philological and philosophical perspectives.

However, impressive as the advantages over the traditional paper edition may be, the BEE is still far from ideal. The BEE runs on the Windows platform and uses FolioViews 3.11.3 as its user interface. Apart from the facts that the technological support for this somewhat user-unfriendly and outdated interface is discontinued and that the installation of the BEE on networks can be quite problematic (cf. Hrachovec 2005), the BEE suffers from serious software restrictions with regard to ‘semantic data-mining’. For commercial reasons – copyrights, the prevention of illegal copying of the ‘source code’ – there is a strict separation between the user-interface and the computational deep structure. The user can search the texts, but is not able to touch the indexing mechanism or to modify any of the underlying data.

This is especially frustrating as the FolioViews interface still mimics print culture, whereas – thanks to the Multi-Element Code System (MECS) that has been used to enrich the texts with all kinds of meta-data – the transcriptions in principle would enable scholars to (re)construct the internal dynamics of Wittgenstein’s *Nachlass*. As Hrachovec explains: ‘Under present conditions one can find a particular paragraph and all of its subsequent instances as they appear in the later volumes. It is, however, impossible to break out of the straitjacket of the von Wright classification and deal with paragraphs as basic data units. [...] It *might* be organized so as to mirror Wittgenstein’s editorial techniques, starting with single remarks as elementary building blocks and putting them together in a variety of ways, following Wittgenstein’s lead. His working process, not its result, could be

taken as the guiding principle. As a matter of fact the encapsulated Folio-Views file is the very opposite of hypertext' (Hrachovec 2000).

A further limitation is that the BEE, despite the fact that it can be made accessible via a network, still has the characteristics of a stand-alone application. The user can make shadow files of the texts in order to add searchable bookmarks, highlighters and notes, but he cannot share them with other scholars within the interface of the BEE. When we realize that the power and value of the Internet is strongly connected with the communication and collaboration that it enables, this is a serious limitation, too. It might be that this is one of the main reasons that in spite of its merits, the BEE so far has attracted relatively little attention.

In order to overcome the aforementioned limitations of the BEE, a Wittgenstein Open Source Movement that would disclose the machine-readable version with its encoded transcriptions and develop 'social software' to stimulate collaboration among scholars would be most welcome. Since the nineties several initiatives in this direction have emerged, such as 'Tracing Wittgenstein', an international research project led by Hrachovec, Köhler and Pichler, that started in 2001 and aims at exploring the *Nachlass* while using and developing new tools for net-based scholarly collaboration.¹³ Among its projects are the publication of several manuscripts from the *Nachlass* in normalized and diplomatic versions on the WWW and the development of APE, a software *Assistant for Philological Explorations*. This program does not only consist of a user-friendly interface to display the different versions of the texts in multiple windows, but also a simple editor for writing and managing notes on primary sources. As software developer Dieter Köhler explains: 'These meta-data is stored in XML and can be shared among users via HTTP, hence making it easy for a distributed group of commentators to organize their collaboration and to keep track of the state of their work. In a future version, this approach shall also allow to integrate the meta-data produced by APE into semantic web activities like those recently launched by the World Wide Web Consortium (W3C). Such semantic webs use standardized vocabularies, so-called "ontologies", to mark up meta-data. This provides a way to automatically evaluate and merge data available on an open hypertext system' (Köhler). In 2007, Alois Pichler got permission from Oxford University Press and Trinity College in Cambridge (who presently holds the copyrights of Wittgenstein's *Nachlass*) to publish an 'open' XML and facsimile version of 5000 pages on the Internet.

Although we should applaud these initiatives, the question remains whether such projects really escape the classical print culture, as they seem to subscribe to the sharp distinctions between authors and readers, and between primary and secondary texts, that characterize print culture. I immediately want to emphasize that, being largely a product of print culture myself, I definitively don't want to advocate giving up those distinctions and the scholarly traditions associated with them altogether. Moreover, just like orality has not disappeared since the introduction of writing, it is unlikely that the book, and the scholarly traditions that are associated with it, will disappear in the age of the computer. However, we should realize that it is unlikely as well that these traditions will not be influenced by the new technologies of reading and writing. And if we want to disclose the internal dynamics of Wittgenstein's *Nachlass*, there are good reasons for taking additional steps in the 'digitalization of Wittgenstein'. If we want to try to imagine what this would require, we might have a look at the present development of the so-called Web 2.0. In my view there we already witness the development of technologies that add a new layer on top of traditional scholarship, and that eventually might lead to a transformation of philosophy that is as radical as the transformation from orality to literacy.

4. "Die Maschine hat es in sich, sich so zu bewegen."

Before I will sketch how 'Wittgenstein 2.0' might look like, I want to return for a moment to Wittgenstein's *Nachlass*, since there we find some further evidence for my claim that already Wittgenstein himself somewhat unwillingly considered the possibility of a 'logical machine' that would enable us to disclose the 'extremely complex connection' of his remarks.

Let us, to begin with, return to the passage from the draft for the *Vorwort* of the *Philosophische Untersuchungen* that Wittgenstein wrote down on 16 September 1937 (MS 118: 95v). I came across this passage while doing a search on the word 'Buch' during the preparation of this paper. Among the 319 hits my attention was especially attracted by this passage because of its reference to the 'network of numbers' that perhaps could make visible the complexity of his remarks. However, while reading this remark, my eyes were suddenly captivated by another sentence, written the same day on the same page of the notebook: 'Die Maschine hat es in sich, sich so zu bewegen'. This remark made me think of the encounter of Witt-

genstein and Turing, of their intellectual kinship and of the possible influence Wittgenstein had on Turing's invention of the virtual computer, the Turing Machine. According to some sources Turing attended Wittgenstein's class in 1935, one year before he wrote a draft for 'On computable numbers' (Nyíri 1989, 383). In this epochal article Turing described a hypothetical machine that, though looking like a typewriter, could perform rather sophisticated functions, such as recognizing particular patterns of marks, and looking up the pattern in a 'table of behavior' to see what it should do next. This machine could, according to Turing, compute any number that was computable, though he also demonstrated in the same article that not all numbers can be computed. Against this 'horizon of experience' it was not that strange that I linked Wittgenstein's remark about the 'network of numbers' to the nearby remark about a machine, that has a predisposition to move *itself* in a certain way ('es in sich [hat], sich so zu bewegen'). Especially not, because I also knew that Wittgenstein in his later philosophy again and again touches upon the problem of ascribing mental predicates, such as intentions and even consciousness to machines. The link between the two remarks suggests that Wittgenstein was thinking about a machine that has a predisposition to visualize the extremely complex connection of the countless remarks.

However, I was also aware of the fact that I did not have any guarantee that Wittgenstein himself connected these remarks in this particular way, not even that he connected them at all. After all, between the two remarks we find another one – "Ich habe gemeint ..." heißt hier: ich habe dies in petto gehabt. Aber dies ist doch ein Bild.' And this remark is separated from the draft for the *Vorwort* by a short diagonal line in the notebook, indicating that Wittgenstein, as often, has jumped to another issue. The 'machine-remark' seems to be connected with the preceding one because they both deal with a sentence in which the word 'in' metaphorically evokes the image of a container. The remark continues: 'Der Fall wird also *verglichen* dem, daß wir etwas aus einem Behälter holen, was dort lag'. Perhaps the connection I made with the remark about the machine was motivated by a romantic-hermeneutical desire to understand the author better than he did himself or, even worse, as an example of *hineininterpretieren*.¹⁴

However, a further search showed that a couple of months later, on January 1, 1938, in the *Typoskript der zweiten Hälfte der Vorkriegsfassung der Untersuchungen* Wittgenstein himself explicitly connects the same remark on the self-moving machine with the (im)possibility of a 'logical machine'.

Here the remark is immediately followed by one that explains the kind of machine Wittgenstein has in mind: ‘Der Mathematiker ist kein Entdecker, sondern ein Erfinder. “Ich kann doch nur folgern, was wirklich folgt!” — D.h.: was die logische Maschine wirklich hervorbringt. Die logische Maschine, das wäre ein Art Weltäther; ein alles durchdringender ätherischer Mechanismus. — Und vor diesem Bild muß man warnen.’ (MS 221: 215).

It is clear that Wittgenstein strongly questions the possibility of a logical machine that ‘moves itself’. The mathematician who claims just to follow the movement of the logical machine, forgets that actually he himself is the inventor, the ‘programmer’ of the logical machine. It is also clear that Wittgenstein’s warning is part of the therapeutic strategy that characterizes his later philosophy. The therapeutic message here seems to be that the ascription of predicates that are part of the ‘human language game’, such as the ability to move or to draw a logical conclusion, to machines, an entity that is part of a different language game, leads to conceptual confusion.¹⁵

However, as Nyíri notes in ‘Wittgenstein and the problem of machine consciousness’, in some other remarks in the *Philosophische Untersuchungen* Wittgenstein seems to broaden the circle of entities in which the ascription of human and even mental predicates makes sense: ‘Aber eine Maschine kann doch nicht denken! — Ist dies ein Erfahrungssatz? Nein. Wir sagen nur vom Menschen, und was ihm ähnlich ist, es denke. Wir sagen es auch von Puppen, und wohl auch von Geistern. Sieh das Wort “denken” als Instrument an!’ (MS 129: 178). Nyíri points at the fact that ‘by stressing that the word “to think” is but a *tool* he actually gives a new direction to the argument: for the application of tools can change’ (Nyíri 1989, 385). Though Wittgenstein’s critique of ascribing mental predicates to machines other than metaphorically, Nyíri continues, may have been justified in the time it was written, it may become pointless in an age where the ‘behavior’ of machines is increasingly less easy to distinguish from human behavior. It may force us to change the rules of this particular language-game. In this context he refers to Sherry Turkle’s fascinating empirical investigations that show that in our present age of computers children are prone to ascribe some sort of consciousness to them (Nyíri 1989, 385).¹⁶

It is within this context that we should understand my proposal to transform Wittgenstein’s *Nachlass* into a part of a ‘conscious, logical machine’. It consist of two steps, that follow the two stages that characterize, on the one hand, Wittgenstein’s development from the *Tractatus* (Wittgenstein I) to his later work (Wittgenstein II), and, on the other hand, the in several

aspects similar development of the World Wide Web from version 1.0 to version 2.0. Where the BEE represents Wittgenstein II using a medium that embodies a Wittgenstein I ontology (Web 1.0), the aim is to represent Wittgenstein II with the use of a technology that is based on a Wittgenstein II ontology (Web 2.0).

In Web 1.0, that is characterized by ‘a *Tractatus* approach’, the web consists of documents – at present more than a billion – that are linked to one another through Hypertext Markup Language (HTML). Loosely using the terminology of the *Tractatus* we could say that the Web 1.0 is a logical space (*logischer Raum*) in which many links (*Sachverhalte*, as ‘2.01 Der Sachverhalt ist eine Verbindung von Gegenständen. (Sachen, Dingen).’¹⁷) between the elementary pages are possible, but only a finite – though at present already astronomically big – number of links actually exist. These actual relationships are *die Tatsache* which together constitute the ‘world’ of Web 1.0. After all: ‘Die Tatsachen im logischen Raum sind die Welt’ (1.13). However, the reality (*Wirklichkeit*) of Web 1.0 also contains many negative facts: the possible links that have not yet been realized, no longer exist, or that might be realized in the future.

We could call the reality of Web 1.0 a *virtual reality* in the sense that, at present, it consists of a great number of logically possible, but non-existing relations. We could compare the world of Web 1.0 with the result of a particular query in a relational database. In this way Web 1.0 is a moving picture of the world we are living in. We find this ‘database ontology’ also in ‘modal sciences’ such as molecular biology.¹⁸ When molecular biologists look at the organic world, they regard it as one specific constellation of a large number of possible (re)combinations of the gene pool. This also counts for the *Bergen Electronic Edition* of Wittgenstein’s *Nachlass*. As we have seen, like the Web 1.0 this edition only presents us with one specific arrangement of Wittgenstein’s work, based on the Von Wright classification. It is possible to search this arrangement in many sophisticated ways, but we cannot – like Wittgenstein did and the genetic engineer and other modal scientists do – freely combine and recombine them. The first step to be taken is to change the *Nachlass* into a logical machine that, starting from the ‘atomic remarks’, is able to present all possible combinations or *Sachverhalte*. Such a ‘moving machine’ transforms virtual reality into *real virtuality*. It would transform Wittgenstein’s *Tractatus* from the doctrine it is often taken for, into a philosophical activity. After all, as Gregory Chaitin remarked: ‘If you fix or freeze life, it dies’.¹⁹ Of course, such a machine

would only be able to express the set of all possible combinations: ‘Über das, was man nicht berechnen kann, muss man schweigen’.

This, however is only the first step. As Herbert Hrachovec rightly remarks with regard to the BEE: ‘Manipulation of the index mechanism *per se* cannot produce *important* results. The disappearance of manifest meaning is, in fact, the price to pay for enhanced electronic facilities. One can easily pick any combination of terms and search constraints – but there is no guarantee whatsoever that this will lead to an interesting result. So where does “importance” come in? This is a category of reflective assessment, crucially different from automated procedures. This discrepancy is at the center of any discussion about computer-assisted philology. [...] to put it very simply: elaborate tools are of little help without knowledge of their proper use’ (Hrachovec 2000).

This certainly is true. All the euphoric talk that has been uttered about the WWW as ‘a global brain’ could not conceal the fact that without a clever user it could not even move, let alone think. And even the perfectly automated Wittgenstein Wide Web 1.9 would, in spite of the fact that it would be able to move independently, still be a mindless machine. The Wittgensteinian critique would still apply that only in a metaphorical and for that reason misleading sense we could talk about it as an intelligent entity. But that is exactly the reason why we should take a decisive second step in order to develop Wittgenstein 2.0. One way or another we should blow some life and intelligence into the machine. However, it is important to realize that – at least in version 2.0 – it would be fruitless to try to replace human with artificial intelligence. Although artificial intelligence without doubt is becoming the dominant form of the externalization of the human mind, we should not regard it as replacement for human intelligence, but rather as a tool to enhance the human intelligence in the light of the information overload. (In the same way the externalization of writing has not – as Plato feared – replaced human thinking, but enabled it to deal with the Neolithic information overload that resulted from the agricultural revolution.)

For this reason, the development of Wittgenstein 2.0 not only asks for further *automatization*, but also, in close connection with this, for *user participation*. The recent development of Web 2.0 gives us some hints about what this may look like. In the beginning of the nineties, the web in many respects still mimicked print culture. Although the old WWW was always ‘under construction’ and in that respect appeared to be much more dynami-

cal and unstable than the world of the book, in many respects it was a rather static medium (Zuniga 2007, 251). In Web 1.0 the visitor of a website largely remained a passive consumer of the texts, images and sounds that were displayed to him. Surely, he got an exciting new exploratory freedom (not seldomly leading to a neurotic following of hyperlinks in the hope to find the sense of closure that characterized the world of the book), but mostly – as a visitor – he was not able to change the content of the websites.

This is rapidly changing. In the emerging Web 2.0 the emphasis shifts from the layout of the webpage, determined by the HTML-code, to the actions of the database that is hidden behind the web pages.²⁰ This shift results in a transformation of the static web page into a dynamic one, that constantly changes through interaction with its visitors. The driving force behind the development of Web 2.0 is XML, an ‘Extensible Markup Language’ that is comparable and partly convertible (Pichler 2002) with the Multi-Element Code System (MECS) used for the BEE, and which is also used in the aforementioned ‘Tracing Wittgenstein’ project and in the coming Bergen online 5000 pages version of the *Nachlass*.

Because of XML it is difficult to keep on using the term ‘pages’. In fact the page is no longer the standard unit, but this role is rather played now by the many packets of data, which are individually addressable. Whereas in Web 1.0 you could only link to pages, the basic unit of the Web 2.0 much more resembles the remarks Wittgenstein constantly re-arranged and changed than the static page in a printed book.

What is also crucial is that XML not only manipulates standard data that are publicly available, such as ISBN numbers of books, but also data generated by users. It’s not without irony that one of the most successful examples of Web 2.0 at present is Amazon.com, a book seller (O’Reilly 2005). The website of Amazon processes three types of data that are being generated thanks to user participation.

Firstly, the customers are invited to add data, such as reviews of the books, photos of the author or artist, remarks on the message board, and even manuals for computer games and other products. Secondly, Amazon.com uses the metadata that customers explicitly add to the products they are interested in, such as ratings and semantic tags. Unlike the standard approach in the semantic web design, that uses formal and standardized ontologies (and that as such repeats the Platonic and Aristotelian ring of the early Wittgenstein), the tags are being generated idiosyncratically by the customers. The resulting ‘folksonomies’ are less strict and more fuzzy than

formal standardized ontologies. In some respects this clearly is a disadvantage, on the other hand this makes them very powerful. They are less prone for mismatches than the ‘essentialist’ ontologies: even searches with typos often result in access to the information one wants. Moreover, they are much more flexible and able to reflect the fuzziness and changeability of the real world. And after all, as the later Wittgenstein claims, the meaning of a word is in the (rule-governed) practices of a community.²¹ The third category of user input is especially interesting, because it is being generated by the visitors through their behavior. When the customer shows interest in a certain book, Amazon.com informs him that customers that bought this book, also bought that book.

Thanks to these different forms of user participation, Web 2.0 ‘pages’ not only constantly change at every visit, but they also get strongly personalized. They remind the visitor of her track record. At the same time Web 2.0 is characterized by the development of all kinds of *social networking applications*. Websites such as Flickr, Last, Youtube, Hyves and MySpace²² enable individuals that share a particular interest to get in contact with each other and to share cultural artefacts and experiences. Because of the aforementioned forms of participation, in these social networks not only content, but also judgements and reviews are being shared. We should think here about wikis such as the Wikipedia and open source communities such as SourceForge.²³ These kinds of social software and their users together constitute new life forms in the Wittgensteinian sense.

Against this background we could now image what a future Wittgenstein Wide Web 2.0 might look like. Its basis will be a relational database containing all propositions, remarks and letters by Wittgenstein. Of course it will still be possible to display the facsimiles and the diplomatic and normalized version of the *Nachlass* as we find them in the BEE. It also might contain the ‘frozen texts’ as they have been published by the trustees and translations of these texts in other languages. In addition, the user would be able to re-arrange the remarks in all possible ways with the help of sophisticated search functions.

As this logical machine will be very complex, the visualization of this multidimensional complexity will be an important part of Wittgenstein 2.0. We might think of 3D models showing the molecular arrangement of the remarks, in which every atom functions as a portal – a wormhole as it were – that gives access to parallel worlds, that is: alternative arrangements taking this particular remark as the centre of the new configuration.

However, thanks to user participation it will also contain a lot of additional useful information, such as annotations, articles and commentaries. In addition it will contain links to relevant audiovisual material, such as recordings of lectures and debates. Moreover, due to ranking of other users and their behaviors, it directs the attention of the users to specific meaningful re-arrangements of the material and related clusters. ‘Researchers that recombined these remarks, were also interested in the following recombinations’. Or: ‘If you liked this conclusion, don’t forget to read the following counter-arguments’. Even more interesting is the possibility to add your own philosophical remarks to the corpus. In a way, the distinction between reader and writer will get blurred, just like the distinction between secondary and primary literature. And of course users will also be able to communicate, via connected bulletin-boards, blogs, live chat or e-mail.

In Wittgenstein 2.0, which will consist of the various interactions between the sophisticated website and its users, Wittgenstein’s logical machine will come alive and will become increasingly intelligent. It will generate new scholarly language games and life-forms. It will become even more interesting when we connect Wittgenstein 2.0 with Turing 2.0 in order to organize a heated debate about artificial intelligence or when the logical machine will connect itself to Bach 2.0 because it recognizes interesting compositional similarities between the *Tractatus* and Bach’s cantates. And because there are still many things that cannot be computed, the logical machine will also have at least one corridor that will lead to a virtual sanctuary where one can remain silent.

Before I conclude I would like to emphasize that Wittgenstein 2.0 will not be an ideal machine, neither technically, nor morally. It will not be a completely consistent machine, it certainly will have bugs and fatal system errors once in a while (De Mul 2007). Moreover, as the logical machine includes human users, it will not be immune to human vices, such as free riding, stealing, hacking, lying and destroying, to mention only a few of them. It may also become a commercial machine, a decision machine for the National Science Foundation or result – as Jeron Lanier argued some time ago with regard to Wikipedia – in a machine that produces mediocrity. Just like every technology it will bring along fascinating possibilities and frightening dangers. Probably it is better not yet to start thinking about a Wittgenstein 3.0, who might start to think for itself.

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Notes

1. I would like to thank Wouter van Haaften (Radboud University Nijmegen) and Bibi van den Berg, Gijs van Oenen and Awee Prins and the other members of the section *Philosophy of Man and Culture* of the Faculty of Philosophy of the Erasmus University Rotterdam for their valuable and constructive comments on earlier versions of this article.
2. 'Darunter ist jedoch keine Fundamentaldisziplin zu verstehen, keine Grund- oder Dachwissenschaft, die alles weitere Wissen reglementieren möchte. Gemeint ist vielmehr der Diskurs einer – ungeschlossen und unabschließbaren – Auseinandersetzung mit einem Kernbereich kritischer Fragen, die alles weitere Wissen als dessen möglichen Selbsterklärung und Korrektur begleiten' (Margreiter 2003, 151).
3. 'Ich fürchte, wir werden Gott nicht los, weil wir noch an die Grammatik glauben...'. (Nietzsche 1980, Band 6, 78).
4. 'The young Wittgenstein put language and linguistic investigations onto centre stage, since he held, against Frege and Russell, that "ordinary language is all right as it is"; that all philosophy is "a critique of language"; that the necessary truths of logic are explicable as senseless tautologies by reference to the ineluctable features of any linguistic symbolism whatsoever; and that the sentences of our languages, fully analysed, necessarily reflect the metaphysical form of the world. This heralded, though obviously did not effect, the so-called linguistic turn in analytic philosophy.' (Hacker 2007)
5. '[M]y friend, you did not give me sufficient information before, when I asked what holiness was, but you told me that this was holy which you are now doing, prosecuting your father for murder. – Euthyphro: Well, what I said was true, Socrates. – Socrates:

Perhaps. But, Euthyphro, you say that many other things are holy, do you not? – Euthyphro: Why, so they are. – Socrates: Now call to mind that this is not what I asked you, to tell me one or two of the many holy acts, but to tell the essential aspect, by which all holy acts are holy...’ Quoted by Nyíri from Harold North Fowler’s translation (Plato 1914).

6. ‘You talk about all sorts of language games, but have nowhere said what the essence of a language game, and hence of language, is: what is common to all these activities, and what makes them into language or parts of language. – And this is true. – Instead of producing something common to all that we call language, I am saying that these phenomena have no one thing in common which makes us use the same word for all, – but that they are related to one another in many different ways’. Quoted by Nyíri from *Philosophical Investigations*, Part I, 65.
7. ‘Ich kann meinen Standpunkt nicht besser charakterisieren, als indem ich sage, daß er der entgegengesetzte Standpunkt dessen ist, welchen Sokrates in den platonischen Dialogen vertritt.’ All quotes from the Nachlass are taken from the normalized transcription of the *Bergen Electronic Edition of Wittgenstein’s Nachlass* (Wittgenstein 2000).
8. I am using here the words Heidegger employs when he refers to the development of Nietzsche’s relation to Platonism, which took the course from a reversal (*Umdrehung*) of the opposition of Being and Becoming to an twisting out (*Herausdrehung*) of this very opposition itself (Heidegger 1961, 240, 242; cf. De Mul 1999a, 68f., 139f.).
9. It is interesting to note that Nietzsche, no less obsessed with writing than Wittgenstein, suffered from the same inability to give his later philosophy a systematic expression in the form of a book. In Nietzsches *Nachlass* we find many sketches and drafts for a ‘definitive book’ that he repeatedly entitled *Der Wille zur Macht*. Also in his case we should not reduce his inability to sheer psychological factors. As far as psychological factors are involved, it has not so much to do with inability but rather with integrity. As Nietzsche expresses it in *Gotzen-Dämmerung*: ‘Ich mißtraue allen Systematikern und gehe ihnen aus dem Weg. Der Wille zum System ist ein Mangel an Rechtschaffenheit.’ (Nietzsche 1980, Band 6, 78).
10. It is far from rare fact that a factual practice (knowing how) is being developed before the explicit awareness of its specific nature (‘knowing that’). A notorious example is Husserl’s reformulation of his method in the *Logische Untersuchungen*. Whereas in the first edition (1900) he states that his phenomenological method should be regarded a ‘deskriptive Psychologie’, in the second edition he explicitly claims that phenomenology ‘ist keine deskriptive Psychologie’ but rather ‘Wesensschau’ (Husserl 1984, II/1,18).
11. The publication of this edition began in 1998 with the publication of Volume 1. The Volumes 2 and 3/4 have been published in 1999 and 2000 respectively. The complete edition consists of one disc containing the transcriptions of the *Nachlass* and other infobases (using Folio Views software as user interface and depending on a MS-Windows environment), and five image discs containing facsimiles (Wittgenstein 2000). In 1993 IntelLex Corporation already published in the *Past Masters Series* an electronic version containing most of the *Nachlass* in an English translation, based on the English language portion of the Wittgenstein corpus as published by Blackwell. However, unlike the BEE this edition this edition is mainly an electronic version of the book publications and apart from a standard search function it does not have extra functionality (cf. Pichler 2002).

12. *Cent mille milliards de poèmes* consists of 10 sonnets, but because every page is cut horizontally into 14 strips each containing one line of the sonnet, the strips may be combined arbitrarily to generate 10^{14} (ten thousand billion) possible sonnets (Queneau 1961). On the World Wide Web many versions of this proto-hypertextual 'book of poetry' can be found (see, for example: <http://www.yapatoo.com/Queneau/>).
13. See <http://wittgenstein.philo.at>
14. However, as I already remarked with a reference to Husserl, it is not exceptional that an author is not fully aware of where he is going before arriving there. Kant already remarks, 'daß es gar nichts Ungewöhnliches sei, sowohl im gemeinen Gespräche, als in Schriften, durch die Vergleichung der Gedanken, welche ein Verfasser über seinen Gegenstand äußert, ihn so gar besser zu erstehen, als er sich selbst verstand, indem er seinen Begriff nicht genugsam bestimmte, und dadurch bisweilen seiner eigenen Absicht entgegen redete, oder auch dachte' (Kant 1968, A314).
15. This becomes even more explicit in another remark on the self-moving machine, in which he links this idea to conceptual confusion: 'Wann denkt man denn: die Maschine habe ihre möglichen Bewegungen schon in irgend einer mysteriösen Weise in sich? – Nun, wenn man philosophiert. Und was verleitet uns, das zu denken? Die Art und Weise, wie wir von der Maschine reden. Wir sagen z.B., die Maschine habe (besäße) diese Bewegungsmöglichkeiten, wir sprechen von der ideal starren Maschine, die sich nur so und so bewegen könne. [...] Wir sind, wenn wir philosophieren, wie Wilde, wie primitive Menschen, die die Ausdrucksweise zivilisierter Menschen hören, sie mißdeuten und nun die seltsamsten Schlüsse aus ihrer Deutung ziehen.' (MS 215: 230).
16. 'The machine ... enters into social life and psychological development, the computer ... affects the way we think, especially the way we think about ourselves. ... The question is not what will the computer be like in the future, but instead, what will we be like? What kind of people are we becoming?' (Turkle 1984, 3).
17. Hence, as Max Black notices in his *Companion to Wittgenstein's Tractatus*, 'the natural reading of *Tatsache* as "molecular fact" (or, "complex fact")' (Black 1964, 31). He adds, however, that this seems to have been contrary to Wittgenstein's original intentions, as in one of his letters he defines *Tatsache* as that 'what corresponds to the logical product of elementary propositions when this product is true' (quoted in Black 1964, idem). However, this interpretation seems not to be consistent with many other propositions in the *Tractatus* (cf.: 'Was der Fall ist, die Tatsache, ist das Bestehen von Sachverhalten' (Wittgenstein 1975, Statement 2), and: 'Das Bestehen und nicht Nichtbestehen von Sachverhalten ist die Wirklichkeit' (2.06)). For that reason I will follow 'the natural reading', as it is also practiced by Erik Stenius in *Wittgenstein's Tractatus* (Stenius 1996, 29f.).
18. Modal sciences as Claus Emmeche defines them in his book *The Garden in the Machine: The Emerging science of Artificial Life*, are not so much led by the question of what reality is, but how *it could be* (Emmeche 1991, 161; see also De Mul 1999b). Although Emmeche mainly refers to artificial life research, in the age of (trans)genetic manipulation it is also applicable to molecular biology and the biotechnologies based on it (cf. De Mul 1999). Modal sciences – and here is an interesting parallel with modern art – are no longer primarily aimed at 'picturing' nature, but rather at the creation of new nature. Their language game is, to use a term Robert Musil introduces in *Der Mann ohne*

Eigenschaften, less characterized by *Realitätssinn* than by *Möglichkeitssinn* (Musil 1978, 16).

19. Lecture, entitled 'Metamathematics and Information Theory', presented at the 30th International Wittgenstein Symposium, Kirchberg am Wechsel, August 8, 2007.
20. The following account of Web 2.0 makes use of the results of Jeffery van Bokkum's MA research into the semiotical dimension of Web 2.0 (Van Bokkum 2007).
21. An interesting account of the relationship between Wittgenstein's conception of meaning and the rapid development of computer-mediated communication was given by Anat Biletzki in a lecture 'Meaning as use in the Digital Turn', that was presented at the 30th International Wittgenstein Symposium, Kirchberg am Wechsel, August 7, 2007.
22. See <http://www.flickr.com/>, www.last.fm/, <http://www.youtube.com/>, <http://www.hyves.nl/> and www.myspace.com.
23. See www.wikipedia.org and <http://sourceforg.net/>

Heidegger und Wittgenstein zur Ontologie und Praxis der Technik

PETER KEICHER, KARSLRUHE

I. Wittgensteins Fortschrittskritik

In einem Vorwortentwurf vom November 1930 beschreibt Wittgenstein seine philosophische Arbeit vor einem weit gefaßten kulturgeschichtlichen Hintergrund, der von der Industrie, über Musik und Architektur, bis zum Faschismus und Sozialismus reicht. Er distanziert sich ausdrücklich vom Strom der *großen* "europäischen und amerikanischen Zivilisation":

Dieses Buch ist für die geschrieben, die seinem Geist freundlich gegenüberstehn. Dieser Geist ist, glaube ich, ein anderer als der des Stromes der großen europäischen und amerikanischen Zivilisation. Der Geist dieser Zivilisation dessen Ausdruck die Industrie, Architektur, Musik, der Faschismus und Sozialismus unserer Zeit ist, ist dem Verfasser fremd und unsympathisch. (MS 109, S. 205f.)

In einem weiteren Entwurf bemerkt Wittgenstein, "daß das Verschwinden einer Kultur nicht das Verschwinden menschlichen Wertes bedeutet sondern bloß gewisser Ausdrucksmittel dieses Werts" (MS 109, S. 206). Nochmals betont er, daß er "dem Strom der Europäischen Zivilisation ohne Sympathie zusehe, ohne Verständnis für die Ziele wenn sie welche hat." (MS 109, S. 206). Die 'Zivilisation' sieht er "durch das Wort Fortschritt" geprägt:

Unsere Zivilisation ist durch das Wort Fortschritt charakterisiert. Der Fortschritt ist ihre Form nicht eine ihrer Eigenschaften daß sie fortschreitet. Sie ist typisch aufbauend. Ihre Tätigkeit ist es ein immer komplizierteres Gebilde zu konstruieren. Und auch die Klarheit dient doch nur wieder diesem Zweck und ist nicht Selbstzweck. (MS 109, S. 207)

Die Kulturkritik des ‘Fortschritts’ durchzieht das gesamte mittlere und späte philosophische Werk Wittgensteins, wobei entsprechende Äußerungen vor allem in jener Art von Bemerkungen zu finden sind, die G. H. von Wright für die “Vermischten Bemerkungen” – *Culture and Value* – zusammengestellt hat. Kaum zufällig wählte Wittgenstein das folgende Zitat aus Nestroys “Schützling” als Motto für die *Philosophischen Untersuchungen*:

Motto: “Überhaupt hat der Fortschritt das an sich, daß er viel größer aussieht als er wirklich ist.” (Nestroy) (TS 227, S. 1)

II. Heideggers Begriff des “Gestells”

Martin Heidegger beschäftigt sich mit dem “Wesen der Technik”, ohne daß sein Denken sich im schulmäßig einengenden oder *instrumentellen* Sinne auf eine “Philosophie der Technik” reduzieren ließe. In den dreißiger Jahren – also wenige Jahre nach dem zitierten Vorwortentwurf Wittgensteins – bezeichnet Heidegger die Technik als eine “Grundform” des Erscheinens des “Zeitalters der vollendeten Metaphysik”:

Das Zeitalter der vollendeten Metaphysik steht vor seinem Beginn. Der Wille zum Willen erzwingt sich als seine Grundformen des Erscheinens die Berechnung und die Einrichtung von Allem, dies jedoch nur zur unbedingt fortsetzbaren Sicherung seiner selbst. Die Grundform des Erscheinens, in der dann der Wille zum Willen im Ungeschichtlichen der Welt der vollendeten Metaphysik sich selbst einrichtet und berechnet, kann bündig ‘die Technik’ heißen. (ÜdM, S. 76)

Diese Notiz entstand während der Zeit des deutschen Nationalsozialismus. In dieser ‘dunklen Zeit’ sind Heideggers Schriften u.a. durch folgende Begriffsfelder geprägt: Wille zum Willen, vollendete Metaphysik, Technik, Unwesen, Nihilismus, Gleichförmigkeit, Unterschiedslosigkeit, Bestand, Berechnung, rechnendes Denken, Seinsvergessensheit, Seinsverlassenheit, Unwahrheit, Umwelt, Irrnis etc., “Die Erde,” so Heidegger damals, “erscheint als die Umwelt der Irrnis. Sie ist seynsgeschichtlich der Irrstern.” (ÜdM, S. 93)

In den späteren Schriften Heideggers tritt an die Stelle der dramatischen Verkündung einer ‘vollendeten Metaphysik’ der Versuch, die philosophischen Grundlagen eines ‘übergänglichen Denkens’ für einen historischen Neuanfang der Philosophie zu schaffen. ‘Wahrheit’ wird zur *Entbergung* oder *Unverborgenheit*, ‘Geschichtlichkeit’ zum *Geschick*, den Begriff der ‘Technik’ ersetzt Heidegger durch den des *Gestells*:

Wir nennen jetzt jenen herausfordernden Anspruch, der den Menschen dahin versammelt, das Sichentbergende als Bestand zu bestellen – das *Ge-stell*. (FnT, S. 23)

Es ist eine Eigenschaft dieses *Gestells*, daß “das Unverborgene nicht einmal mehr als Gegenstand, sondern ausschließlich als Bestand den Menschen angeht”, wodurch Heidegger zufolge der Mensch Gefahr läuft, “selber nur noch als Bestand genommen” zu werden (FnT, S. 30). Zum *Gestell* heißt es weiter:

Allein, das Ge-stell gefährdet nicht nur den Menschen in seinem Verhältnis zu sich selbst und zu allem, was ist. Als Geschick verweist es in das Entbergen von der Art des Bestellens. Wo dieses herrscht, vertreibt es jede andere Möglichkeit der Entbergung. (...) Wo das Ge-stell waltet, prägen Steuerung und Sicherung des Bestandes alles Entbergen. (FnT, S. 31)

III. Martin Heidegger und Carl Friedrich von Weizsäcker

In den fünfziger Jahren beschäftigte Heidegger sich mit dem Begriff der ‘Information’, der sich damals in den deutschen Wissenschaften erst langsam verbreitet hatte (vgl. HdH, S. 27). Carl Friedrich von Weizsäckers Vortrag “Die Sprache als Information” (von Weizsäcker, 1959) fand bei Heidegger – ähnlich wie die Theorien Heisenbergs – großes Interesse. Heideggers Vortrag “Der Weg zur Sprache” von 1959 enthält eine detaillierte Auseinandersetzung mit von Weizsäckers Vortrag – es wird oft übersehen, daß es sich dabei um ein interdisziplinäres Gespräch handelt –, die hier nicht ausführlich dargelegt werden kann. Hier sei nur von Weizsäckers Hauptthese angeführt:

Information ist ein Begriff, der zur exakten Wissenschaft in naher Beziehung steht. Das Thema 'Sprache als Information' stellt die Frage nach den Wesenszügen der Sprache, die sie zum Träger exakter Wissenschaft werden lassen. (...) Läßt sich Sprache ganz in Information verwandeln? Diese Frage will ich nicht durch den billigen Hinweis auf Formen der Sprache, die nicht unter den Informationsbegriff fallen, abtun. Ich will vielmehr versuchen zu zeigen, daß der Begriff der Information selbst eine Art der Sprache voraussetzt, die nicht in Information verwandelt ist. (von Weizsäcker, 1959, S. 40)

Auch bei Heidegger geht es zunächst um den Zirkel des Denkens der *Sprache als Information* und der *Information als Sprache*. Diesem 'Geflecht' stellt Heidegger die später berühmt gewordene Formel entgegen: "*Die Sprache als die Sprache zur Sprache bringen.*" (WzS, S. 243) Heideggers Erörterung führt zum Anspruch des *Gestells*, durch das "alles Bestellen sich in das rechnende Denken eingewiesen sieht und so die Sprache des Ge-Stells spricht." (WzS, S. 263) Nun folgt Heideggers Interpretation der 'Information':

Das so gestellte Sprechen wird zur Information. Sie informiert sich über sich selbst, um ihr eigenes Vorgehen durch Informationstheorien sicherzustellen. Das Ge-Stell, das überallhin waltende Wesen der modernen Technik, bestellt sich die formalisierte Sprache, jene Art der Benachrichtigung, kraft deren der Mensch in das technisch-rechnende Wesen eingeformt, d.h. eingerichtet wird und schrittweise die 'natürliche Sprache' preisgibt. Auch dort, wo die Informationstheorie zugestehen muß, daß die formalisierte Sprache immer wieder auf die 'natürliche Sprache' zurückverwiesen werde, (...) bezeichnet dieser Umstand für die gängige Selbstauslegung der Informationstheorie nur ein vorläufiges Stadium. Denn die 'natürliche Sprache' (...) wird im voraus als die noch nicht formalisierte, jedoch als in die Formalisierung bestellte Sprache angesetzt. Die Formalisierung, die rechnerische Bestellbarkeit des Sagens, ist das Ziel und die Maßgabe. (WS, S. 263)

Was die *Sprache* angeht, die als *Information* zum Gegenstand der Technik wird, erinnert Heidegger an jene ‘Geschichtlichkeit’, die sowohl Mensch und Technik, als auch *natürliche* und *formalisierte* Sprache gemeinsam haben.

Es gib keine natürliche Sprache nach der Art, daß sie die Sprache einer geschicklos, an sich vorhandenen Menschennatur wäre. Jede Sprache ist geschichtlich, auch dort, wo der Mensch die Historie im neuzeitlich-europäischen Sinne nicht kennt. Auch die Sprache als Information ist nicht *die* Sprache an sich, sondern geschichtlich nach dem Sinn und den Grenzen des jetzigen Zeitalters, das nichts Neues beginnt, sondern nur das Alte, schon Vorgezeichnete der Neuzeit in sein Äußerstes vollendet. (WzS, S. 264f.)

In Abwandlung jenes berühmten Bonmots von Alfred North Whitehead, demzufolge die abendländische Philosophie sich als eine Serie von Fußnoten zu Plato beschreiben läßt (Whitehead, 1929, Teil II, Kap.1.1, S. 91), könnte man auch sagen, daß sich, Heidegger zufolge, in der Geschichte des Abendlandes nur die technologischen ‘Anwendungsformen’ einer bei Plato in ihren “metaphysischen Anfangsgründen” (N, Bd. 1, 474) bereits vollständig vorgezeichneten Logik verändert haben.

IV. Heidegger und die “zwei Kulturen”

Heideggers Philosophie steht einem sinnvollen Gebrauch neuer Technologien keinesfalls entgegen. Was Heidegger vor etwa fünfzig Jahren zu einem “vollendeten Nachrichtenwesen” schrieb, ließe er heute vermutlich auch für die wissenschaftliche Nutzung digitaler Informationstechnologien gelten:

Ohne die Technik der großen Laboratorien, ohne die Technik der großen Bibliotheken und Archive und ohne die Technik eines vollendeten Nachrichtenwesens ist eine fruchtbare wissenschaftliche Arbeit und eine dementsprechende Wirkung heute undenkbar. Jede Abschwächung und Hemmung dieser Tatbestände ist Reaktion. (N, Bd. I, 237)

Man muß Heidegger jedoch etwas sorgfältiger lesen, um zu erkennen, daß es gerade auch die *Technik* ist, die ihm zufolge verhindern kann, daß der Mensch zum bloßen *Bestand* wird. Was den Menschen angeht, so wird dieser, Heidegger zufolge, “niemals zu einem bloßen Bestand.” (FnT, S. 22) Indem der Mensch “die Technik betreibt, nimmt er am Bestellen als einer Weise des Entbergens teil.” (FnT, S. 22). Die ernst genommene Praxis sinnvoller *technischer Gestaltung* zum Nutzen des Menschen steht Heidegger zufolge auf der gleichen Stufe der ontisch-ontologischen Wahrheit oder der *Entbergung*, wie die Bestimmung der Kunst als *techné* in der griechischen Philosophie der Antike (FnT, S. 38).

Weil das Wesen der Technik nichts Technisches ist, darum muß die wesentliche Besinnung auf die Technik und die entscheidende Auseinandersetzung mit ihr in einem Bereich geschehen, der einerseits mit dem Wesen der Technik verwandt und andererseits von ihm doch grundverschieden ist. Ein solcher Bereich ist die Kunst. (FnT, S. 39)

Die Aktualität und Bedeutung Heideggers besteht darin, daß er nicht nur die Risiken eines *ideologischen* Umgangs mit der Technik aufzeigt, sondern gerade auch die Technik als eben jenen *philosophischen* Ausgangspunkt bestimmt, der für eine *geschichtliche* Bestimmung des Menschen unverzichtbar erscheint. In der üblichen Lesart gelten Begriffe wie das ‘rechnende Denken’ oder die ‘instrumentelle Vernunft’ als paradigmatische Versatzstücke konservativer deutscher Kulturkritik und Technikfeindlichkeit des 20. Jahrhunderts. Dabei wird aber meistens Heideggers Bemühen überlesen, die Technik als *affirmative Möglichkeit* zu begreifen, wodurch seine Warnungen vor einem unangemessenen Verhältnis von Mensch und Technik eben gerade nicht technikfeindlich zu interpretieren sind, sondern vielmehr als eine philosophische *Pflicht*, wenn man so will, *der Vermittlung* zwischen den ‘Zwei Kulturen’ der naturwissenschaftlichen und der literarischen Intelligenz (Snow, 1959).

V. Wittgensteins “Wende”

In den Vorwortentwürfen von 1930 bezeichnet Wittgenstein die Form des zivilisatorischen Fortschritts als “typisch aufbauend”, dessen Ziel benennt

er dahingehend, “ein immer komplizierteres Gebilde zu konstruieren” (MS 109, S. 207) oder “von einer Stufe zur anderen” zu steigen (MS 109, S. 211). In diesem Kontext kommt nun auch jene akzentuierte Bemerkung zu stehen, “Was auf einer Leiter erreichbar ist interessiert mich nicht.” (MS 109, S. 207f.), die sich offenbar auf die *Logisch-Philosophische Abhandlung* bezieht. Schon während der dreißiger Jahre betonte Wittgenstein also nicht nur eine stärkere ‘Bodenständigkeit’ der Philosophie, es ist auch bemerkenswert, daß diese Kritik an der *Abhandlung* hier metaphorisch in direkter Verbindung zur Kritik des zivilisatorischen Fortschritts steht. Kaum zufällig bemängelt er deshalb auch, daß die *Abhandlung* den Eindruck von ‘Entdeckungen’ vermittele:

In meinem früheren Buch ist die Lösung der Probleme noch viel zu wenig hausbacken dargestellt es hat noch zu sehr den Anschein als wären Entdeckungen notwendig um unsere Probleme zu lösen und es ist alles noch zu wenig die Form von grammatischen Selbstverständlichkeiten in gewöhnlicher Ausdrucksweise gebracht. Es schaut alles noch zu sehr nach Entdeckungen aus. (MS 109, S. 212f.)

Dem streng ‘formalsprachlichen’ Charakter der *Logisch-Philosophischen Abhandlung* steht bei Wittgenstein später eine dezidierte Ausrichtung auf die lebensweltliche Alltagspraxis der “normalen” oder “natürlichen” Sprache gegenüber. Vor diesem Hintergrund – sozusagen nach dem Motto “Zurück auf den rauhen Boden!” (TS 227, Nr. 107) – erscheint Wittgenstein die in der *Logisch-Philosophischen Abhandlung* angestrebte “Kristallreinheit der Logik” nunmehr als eine bloße “Forderung”.

Die Kristallreinheit der Logik hatte sich mir ja nicht *ergeben*; sondern sie war eine Forderung. (TS 227, Nr. 107)

In den *Philosophischen Untersuchungen* werden die abstrakten, idealen und exakten Bedingungen der im “Wesen” der Logik (TS 227, Nr. 89) begründeten Theorie einer *formalisierten* Sprache mit dem “Widerstreit” und der “Reibung” (TS 227, Nr. 107, 130) der alltäglichen Praxis und Mannigfaltigkeit einer lebensweltlich fundierten *natürlichen* Sprache verbunden.

Wir erkennen, daß, was wir “Satz”, “Sprache”, nennen, nicht die formelle Einheit ist, die ich mir vorstellte, sondern die Familie mehr oder weniger mit einander verwandter Gebilde. – Was aber wird nun aus der Logik? Ihre Strenge scheint hier aus dem Leim zu gehen. – Verschwindet sie damit aber nicht ganz? – Denn wie kann die Logik ihre Strenge verlieren? Natürlich nicht dadurch, daß man ihr etwas von ihrer Strenge abhandelt. – Das *Vorurteil* der Kristallreinheit kann nur so beseitigt werden, daß wir unsere ganze Betrachtung drehen. (TS 227, Nr. 108)

VI. Wittgenstein über Dogmatismus

Die selbstkritischen Äußerungen zur *Logisch-Philosophischen Abhandlung* führen in den *Philosophischen Untersuchungen* auch zu Bemerkungen über philosophischen “Dogmatismus”. Die Forderung der “Kristallreinheit der Logik” erscheint Wittgenstein nun als ein “Vorurteil, dem die Wirklichkeit entsprechen *müsse*.” (TS 227, Nr. 131) Als ein solches Vorurteil ist die Forderung nach logischer Formalisierung dem “Dogmatismus” verwandt, der nach Wittgenstein vor allem durch die “Leere” und “Ungerechtigkeit” bloßer “Behauptungen” geprägt ist.

Nur so nämlich können wir der Ungerechtigkeit, oder Leere unserer Behauptungen entgehen, indem wir das Vorbild als das, was es ist, als Vergleichsobjekt – sozusagen als Maßstab – hinstellen; und nicht als das Vorurteil, dem die Wirklichkeit entsprechen *müsse*. (Der Dogmatismus, in den wir beim Philosophieren so leicht verfallen.) (TS 227, Nr. 131)

Worin besteht nun aber jene ‘Drehung’ der Betrachtungsweise, durch die die dogmatischen Aspekte der *Abhandlung* jetzt philosophisch anders begründet und auch aus der Perspektive der *Philosophischen Untersuchungen* legitim erscheinen? Wittgensteins Alternative ist, wie zumeist, so einfach wie subtil, so konsequent wie philosophisch folgenreich.

Es ist oft ganz genügend für uns, zu zeigen, daß man etwas nicht *so* nennen *muß*; daß man es *so* nennen kann. Denn *das* schon ändert unsre Anschauung der Gegenstände/das Gesicht der Dinge.

In diesem Sinne waren meine dogmatischen Äußerungen unrichtig. Aber sie könnten richtig gestellt werden wenn man dort, wo ich sagte: “das ist so anzusehen”, sagt: “man kann das auch so ansehen”. Und es wäre falsch, nun zu glauben, daß dem Satz dadurch sein eigentlicher Witz genommen ist. (MS 163, S. 58rf.)

Dogmatismus und Ideologie haben gemeinsam, daß sie durch Forderungen geprägt sind, durch die Leere und Ungerechtigkeit bloßer Behauptungen, durch Vorurteile, denen die Wirklichkeit entsprechen soll, und durch abstrakte Systeme, denen gegenüber *Lebenswelt, Alltag, praktische und menschliche Bedürfnisse* nur zweitrangig erscheinen. Wittgenstein kannte die totalitären Ideologien des 20. Jahrhunderts sehr wohl. Es ist ein Merkmal seiner Philosophie, daß sie jeder ideologischen Vereinnahmung entgegensteht. Entsprechend unspektakulär, auf den ersten Blick einfach und bescheiden, tatsächlich aber von entscheidender Bedeutung, von größter Distinktion und menschlicher Noblesse, ist die folgende Bemerkung zu allen übertriebenen dogmatischen Behauptungen:

Man möchte so bei allen übertriebenen dogmatisierenden Behauptungen immer fragen: Was ist denn nun daran wirklich wahr. Oder auch: In welchem Fall stimmt denn das nun wirklich? (MS 111, S. 120)

Wittgensteins Kritik an den *dogmatischen* Aspekten der “formalsprachlich” geprägten *Logisch-Philosophischen Abhandlung* führt weder zu einem neuen Dogmatismus der *natürlichen* Sprache, noch wird dadurch der Logik “etwas von ihrer Strenge” abgehandelt (TS 227, Nr. 108). Die Logik und logisch *formalisierte* Sprachen sind für Wittgenstein keinesfalls schon *per se* dogmatisch, und noch weniger das “vor aller Erfahrung” (TS 227, Nr. 97) gegebene “Wesen” der Logik (TS 227, Nr. 92). Nicht die Unabhängigkeit der Logik vom “So oder So des tatsächlichen Geschehens” (TS 227, Nr. 89) ist dogmatisch; auch der mögliche Anspruch auf ein sinnvolles Eingreifen der Logik in das lebensweltliche Geschehen, z.B. als Technologie oder Logistik, ist keinesfalls *per se* dogmatisch; dogmatisch wird der Anspruch einer lebensweltlichen Instrumentalisierung der Logik nur dann, wenn er die Regeln des gesunden Menschenverstandes zugunsten einer dogmatisch verabsolutierten Folgerichtigkeit deduktiver Logik mißachtet.

Nicht die *Unabhängigkeit* der Logik vom ‘So oder So des tatsächlichen Geschehens’ ist also dogmatisch, sondern nur der Anspruch auf eine *Entscheidung* dieses ‘So oder So’ durch Deduktion aus nunmehr *ideologischen* Prämissen ohne Rücksicht auf funktional-praktische oder menschlich-lebensweltliche Belange. Nicht durch ein *sinnvolles* oder *funktionales* System “werden wir gedrängt, zu dogmatisieren” (MS 122, S. 75r), sondern nur durch ein solches, das für lebensweltliche Anforderungen postuliert wird, sich dafür aber gar nicht eignet, d.h. durch ein System, das in der Praxis *nicht funktioniert* oder in dem ‘übertriebene’ ideologische Prämissen verabsolutiert werden, so daß ein Konflikt entsteht zwischen *systemisch-dogmatisierenden* und *lebensweltlich-pragmatischen* Anforderungen. In den *Philosophischen Untersuchungen* heißt es: “Ein Ideal der Genauigkeit ist nicht vorgesehen” (TS 227, Nr. 88). Dies bedeutet natürlich nicht, daß deshalb logische Strenge und Präzision verabschiedet werden sollten, sondern lediglich, daß *ein* Ideal der Genauigkeit genau dann dogmatisch werden *kann*, wenn in der Praxis *andere* Ideale oder Formen der Genauigkeit erforderlich sind. Ähnlich ist auch die Forderung nach Exaktheit nicht *per se* dogmatisch. Dogmatisch wird diese Forderung erst dann, wenn eine Exaktheit vorliegt, die keine Funktion hat, d.h. in Wittgensteins Worten: eine Exaktheit, die “*leer läuft*” (TS 227, Nr. 88).

VII. Wittgenstein und die Technik

Das Bild ‘leerlaufender’ Räder entstammt der Technik. Wittgenstein verwendet es für unterschiedliche sprachliche Konstruktionen. Er spricht von “leerlaufenden Rädern” der Sprache (MS 107, S. 206), leerlaufenden Sätzen (MS 116, S. 253), Sprachspielen (MS 121, S. 20v), Bildern (MS 156a, S. 11v), Erlebnissen (MS 131, S. 28), Gesetzen (MS 107, S. 198) oder Hypothesen (MS 120, S. 6r). Wittgenstein zufolge entstehen philosophische Probleme häufig dadurch, daß nicht klar genug zwischen den praktischen Zwecken unterschieden wird, die in den jeweiligen sprachlichen oder sprachähnlichen Konstruktionen auch unterschiedliche Regeln implizieren. Eine wichtige Aufgabe der Philosophie besteht deshalb darin, die Regeln und Kontexte des praktischen Gebrauchs von Worten zu benennen.

Wir interessieren uns für die Sprache, als einen Vorgang nach expliziten Regeln. Denn die philosophischen Probleme sind Mißverständnisse, die durch Klärung der Regeln, nach denen

wir die Worte gebrauchen wollen, zu beseitigen sind. (MS 140, S. 24)

Man muß über technisches Fachwissen verfügen, um manche Bemerkungen Wittgensteins zu verstehen wie z.B. "Der Satz ist mit der Wirklichkeit durch eine Friktionskupplung verbunden." (MS 145, S. 2). Wittgensteins Verhältnis zur Technik ist weniger 'seinsgeschichtlich' als vielmehr *praktisch* und *pragmatisch* geprägt. Da er selbst Ingenieur und Architekt war, überrascht es nicht, daß seine Methode der Philosophie auch wichtige *technische* und sogar konkrete *arbeitstechnische Aspekte* enthält.

Die Konfusionen die uns beschäftigen entstehen, gleichsam, wenn die Sprache feiert, nicht wenn sie arbeitet. (Man könnte sagen: "wenn sie leer läuft".) (MS 115, S. 53)

Den 'Konfusionen', 'Irrtümern', 'Mißverständnissen' und 'Problemen' der schlechten Konstruktionen einer *theoretisch falsch* verstandenen Philosophie stehen bei Wittgenstein auf der anderen Seite 'Methode', 'Funktionalität', 'Zweck' und 'Praxis' der guten Konstruktionen einer *praktisch richtig* verstandenen Philosophie gegenüber. Das Ziel, vorliegende Probleme möglichst 'vollkommen zu lösen', ist bei Wittgenstein nicht nur ein *technisches* sondern auch ein *philosophisches* Arbeitsprinzip, das jedoch für unterschiedliche Fälle auch unterschiedliche Vorgehensweisen erfordert.

Denn die Klarheit, die wir anstreben, ist allerdings eine *vollkommene*. Aber das heißt nur, daß die philosophischen Probleme *vollkommen* verschwinden sollen. (...) Es werden Probleme gelöst (Schwierigkeiten beseitigt), nicht *ein* Problem. (TS 227, Nr. 133)

Ein solches *philosophisches* 'Verschwinden der Probleme' ist dem *technischen* 'Verschwinden der Probleme' durch eine praktische Lösung vergleichbar, z.B. durch eine gelungene, solide und funktionale Konstruktion, durch ein feines mechanisches Getriebe, in dem die kleinsten Räder schlüssig ineinander greifen, oder auch durch eine größere Maschine, die in der Praxis stetig und zuverlässig ihren Zweck erfüllt. Eine *technische* "Einsicht in das Arbeiten unserer Sprache" ist nach Wittgenstein auch zur Lösung *philosophischer* Probleme erforderlich.

Diese sind freilich keine empirischen, sondern sie werden durch eine Einsicht in das Arbeiten unserer Sprache gelöst, und zwar so, daß dieses erkannt wird: *entgegen* einem Trieb, es mißzuverstehen. Die Probleme werden gelöst, nicht durch Beibringen neuer Erfahrung, sondern durch Zusammenstellung des längst Bekannten. (TS 227, Nr. 109)

Auch die "Zusammenstellung des längst Bekannten" kann *philosophisch* und *technisch* interpretiert werden. Philosophisch kommt hierdurch eine Priorität der Beschreibung *praktischer Gegebenheiten* gegenüber den Hypothesen zu *theoretischen Möglichkeiten* zum Ausdruck, in Wittgensteins Worten: "Es darf nichts Hypothetisches in unsern Betrachtungen sein." (TS 227, Nr. 109) Die genannte "Zusammenstellung des längst Bekannten" ist gleichzeitig ein Prinzip *technischer* und *technologischer Praxis*, in der tatsächlich jede stimmige und funktionale Konstruktion als eine Methode der Anwendung oder Kombination eindeutiger und oft längst bekannter Gesetze für lebensweltlich ebenfalls bereits gegebene oder auch zielorientiert konkret vorgegebene praktische Zwecke erscheint. Die Arbeit an entsprechenden Lösungen mag schwierig und mühevoll sein, die Lösung selbst ist es idealerweise nicht, sie soll im Gegenteil einfach, funktional und in der Praxis ohne größere Erläuterungen oder Diskussionen einsichtig sein.

Wollte man *Thesen* in der Philosophie aufstellen, es könnte nie über sie zur Diskussion kommen, weil Alle mit ihnen einverstanden wären. (TS 227, Nr. 128)

Diese Bemerkung ist eine der akzentuiertesten, die in Wittgensteins Schriften zum Thema einer möglichen Entsprechung von *philosophischen* und *technischen* Problemstellungen zu finden ist. In diesem Sinne erscheinen hier nicht philosophische Thesen unsinnig, sondern die Diskussion über diese, sofern diese Thesen so schlüssig und solide 'arbeiten' wie eine verlässliche technische Konstruktion. Die zitierte Bemerkung entstammt beziehungsweise ursprünglich der 'mittleren Periode', in der Wittgenstein u.a. die Bedingungen einer möglichen Transformation der *Logisch-Philosophischen Abhandlung* erprobt (MS 110, S. 259, 1931). Ähnlich wie in der *Abhandlung* geht es dabei um die *idealen* Bedingungen einer nunmehr konsequent *pragmatisch* zu fundierenden Philosophie. Im Unterschied zur *Abhandlung* ist Wittgenstein sich hier aber des *hypothetischen* Charakters

der nach dem technischen Vorbild *idealerweise* überflüssigen Diskussionen relevanter philosophischer Thesen bewußt. Wittgensteins philosophisches Denken ist zu vielschichtig, als daß es sich nur auf diesen einen Aspekt reduzieren ließe. *Ein* bedeutender Aspekt ist aber der folgende: Wittgensteins Philosophie kann offenbar nicht nur als eine philosophische *Theorie* der Technik, sondern auch als eine technische *Praxis* der Philosophie interpretiert werden.

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Towards Future Digital Scholarship

DIETER KÖHLER, KARLSRUHE

1. Language Philosophy's Ignorance about Media

1.1 Analytical Philosophy: The Example of Quine

In the more recent historiography of analytical philosophy the phrase “pragmatic turn” is often heard and then typically associated with Quine's first outlines of a naturalised epistemology from the 1950's. As is generally known, Quine directly opposed unjustified idealisations of traditional empiricism, even though his own philosophising was based on an idealisation of language when he conceived theories as conceptual schemes. Obviously Quine was only interested in theories whose logical structure can be perceived clearly and precisely. He does not elaborate on issues relating to the form or media in which theories are presented, nor the method whereby our thoughts intermingle.¹

A Quinian web of belief is constructed according to the paradigm of propositional predicate logic. New observations may not be in line with an established theory and thus will demand its adjustment for which – as Quine points out – in every case multiple options exist. In other words: theories are always underdetermined.

Nevertheless Quine's model for the scientific processes of adaptation is still too optimistic, because he presumes that we are able to maintain a complete overview of our theories. Usually this is not the case. We are only working with fragments. Our net of convictions satisfies the ideal of consistency only locally or roughly, no matter how hard we strive.

This problem has been intensified by the increasing division of labour within modern science and scholarship. Each scientist or scholar largely relies on other academic authorities. What he believes depends considerably on the available ways and means of correlating his convictions with those of other people. In this context media are instruments of thought and must not be ignored by the philosophy of science and by epistemology.

The evidence on which we base our beliefs can be of varying nature. Not only in science but also in the humanities we start with observations. But often we transform them not explicitly into observation sentences, but rather into diagrams, drawings, photographs, motion pictures etc. These are then directly incorporated into our deliberations. Even when it comes to texts, the canonical form in which they enter the academic discourse must often first be established by dedicating a lot of effort into deciphering the relevant sources.

Notwithstanding that, for a long time analytical philosophy treated language simplistically in terms of idealised conceptual schemes and largely ignored the media aspects of communication. To a certain extent this is even true of Austin's speech act theory. Although he no longer limits the analysis of language usage to the ideal of a coherent system of propositions, he obviously does not contemplate the media aspects of speech acts.²

Of course, media theory is an established academic subject. Newspapers, radio, film and (more lately) television have been the object of numerous studies for several decades. But epistemology and the philosophy of science have not been greatly affected by these efforts. The media in which theorising takes place do not themselves appear within these theories. They usually remain unconscious and thus invisible. This is especially true for texts. We treat them as something intelligible because we assume that what a particular copy conveys can just as well be delivered by another copy of the same book or by a transcription. Sometimes we may appreciate the tactile qualities of a book's cover but for the quality of the text the material substrate is of no importance.

A medium does not catch our attention until it shows itself stubborn or until a new medium starts to challenge our subliminal habits. So, as the Internet begins to massively alter academic communication, analytical philosophy slowly becomes conscious of the impact of media on theorising.

1.2 Hermeneutics: The Example of Gadamer

If we take a look at the great antagonist of analytical philosophy: the hermeneutic tradition, the situation appears to be quite similar. For instance, one chapter in Gadamer's "Truth and Method" is entitled: "Language as the medium of hermeneutic experience"³. The fact that the term "language" is used so summarily here already insinuates that in this chapter no internal differentiation can be expected regarding the diversity of language-related

media. The protagonists in this hermeneutic theory are universals like “the language”, “the understanding”, “the prejudice” or “the horizon”. This style of deliberation leaves it open as to who actually is involved when the hermeneutic process arrives at an agreement: individuals or collectives? Gadamer ignores the differences between an understanding that takes shape in the mind of an individual and a corporate understanding that emerges within an academic community.

Nevertheless, the humanities are collective enterprises characterised by the division of labour. It is a community of researchers who strive together for a better understanding of an author, for instance. A broad hermeneutic theory must also consider the means and the external conditions that influence the way such an understanding is accomplished. It is not only the human mind that is relevant here, but also distribution media, communication channels and institutions. The joint struggle for the correct comprehension of a topic utilises diverse media within varying communication scenarios. One maintains contacts, meets at symposia, publishes articles and monographs, searches for literature in libraries and second-hand bookshops, queries databases or surfs the Internet etc. In such hermeneutic processes many different things are important, such as cultural techniques (like reading and writing), a highly developed information infrastructure (including libraries, publishing houses, book shops) and suitable technology (from the pen holder to text processing software). All these components interact in various ways. Modifications in one area entail changes in other zones.

2. The Humanities and the New Media

Regardless of whether it was the success of the Internet that drew the attention of philosophers to media philosophy, the importance of the “new media” for our academic work demands a close inspection. But before making some brief remarks about the impact of the Internet on philosophy in particular, I want to consider two of its aspects that are of special importance for the humanities in general.

Firstly there is the potential to use the computer for completely new types of knowledge presentation and processing. In recent years we have witnessed new publication forms combining texts, still images and motion pictures, which have been supplemented with digital modelling and interactive simulation. From computer games through multimedia encyclopaedias

to numerous innovative Internet genres we have seen the appearance of many new formats, and a lot more are likely to emerge in the next few years.

The surface of multimediality, *viz.* the combination of multiple media forms by a single presentation device, is only the outer and obvious aspect of an entanglement that actually reaches far deeper. For the functioning of research it is not only significant in what form its outcome is presented, but also in which ways different media interact with each other during the formation and justification of theories. What matters is not just the straightforward accumulation of knowledge, but also (and that is the second important aspect that concerns me here) that knowledge assets must be meaningfully related to each other.

It follows, therefore, that the Internet poses a significant challenge for the humanities in two fields: We must develop new forms of presenting knowledge, and we must design new integrative strategies to discover widely scattered pieces of information, to relate them to each other and to critically evaluate them.

2.1 The Development of New Representational Forms: An Example

That new representational forms can be superior to traditional ones is best demonstrated by an example. Let us pursue the question of which representational form is the most appropriate for publishing the *Nachlass* of Ludwig Wittgenstein.

Ludwig Wittgenstein's *Nachlass* consists of various manuscripts, typescripts, and smaller notes which make up the resources from which several editors published posthumous collections, often without sufficient philological care. In recent years efforts have been made to prepare editions according to superior editorial standards.

In his lifetime Wittgenstein only published his early "Tractatus logicus-philosophicus", a vocabulary booklet for elementary schools, and one journal article. Some of his later typescripts circulated among his fellow philosophers, but were considered by himself to be incomplete. There is also no agreement as to what extent his famous "Philosophische Untersuchungen", which were intended as a posthumous work, should be treated as a completed book. In fact the *Nachlass* mainly consists of a series of manuscripts and typescripts containing subsequent revisions of previous drafts, allowing

us to follow the development of Wittgenstein's ideas over the years in very fine detail. Although (or perhaps just because) these drafts never reached the level of completeness, it has been a strong temptation for editors of Wittgenstein's *Nachlass* to reconstruct books which in reality were never written.

But the main purpose, even of Wittgenstein's most elaborate drafts, was not to communicate his ideas to others. Primarily they were instruments of thought helping him to develop complex theories. This process is holistic by nature: integrating a new idea into a web of beliefs, especially if the idea is of fundamental philosophical importance, might require reconsidering quite a lot of old convictions even in the most remote fields. In the case of Wittgenstein the conversion of his views was so extensive that it has become a custom (not adopted by all scholars, though) to differentiate between the "early" and the "later Wittgenstein". Whether some of his fundamental ideas remained the same or not, the fact that Wittgenstein was never satisfied with his writings indicates that he failed to adjust his different convictions and observations to reach a level of coherence that could put his mind at rest (at least for a moment).

All this has to be carefully considered when preparing an edition. Giving the false impression that the manuscripts contain almost settled theoretical systems has to be avoided, although it is highly desirable that an edition supports the study of the intellectual movements documented by the writings. In this respect the closest to the original is a facsimile. However, it can be tiring to decipher long handwritten passages. A diplomatic transcription, which tries to represent as many textual features as possible, might suffice for most investigations, although it can still be hard to follow the different readings. A normalized transcription tries to bypass such difficulties by skipping deletions, carrying out changes of order and correcting misspellings, but the impression it gives of its textual source can be extremely misleading, since it unavoidably covers up many tracks which otherwise could help us with arriving at well-balanced judgements about the status of the source's statements. One might consider such an edition tolerable as long as the reader is conscious of its limitations, but unfortunately Wittgenstein has been studied for a long time on the basis of editions which, while lacking even the smallest text-critical indication, often just presented rearranged selected fragments.

In recent years some efforts have been made to prepare better editions. One of these projects, located at the Wittgenstein Archives at the University

of Bergen, Norway (WAB), aimed to develop a digital transcription of the whole *Nachlass*. From this transcription a diplomatic and a normalized version for Folio Views, which is a commercial browser for CD-ROM editions, was produced and together with a digital facsimile, made by Oxford University Press, published on CD-ROM as the so-called “Bergen Electronic Edition”. A few transcriptions (but no facsimiles) were also made publicly available as HTML files on the Web-site of the WAB. In summer 2001 a working group was formed under the label “Tracing Wittgenstein” by Prof. Herbert Hrachovec (Institute of Philosophy at the University of Vienna), Dr. Alois Pichler (WAB), and myself. Our goal has been to develop a framework for the use of the digital transcription that goes beyond the capabilities of the CD-ROM edition. Alois Pichler agreed to coordinate activities to create an XML version of the transcription, Herbert Hrachovec to write a hypertextual commentary on one of the manuscripts, and myself to develop an application which allows a more adequate presentation of the primary texts and the commentary, taking into account the peculiarities of Wittgenstein's *Nachlass*.⁴

From the characteristics of Wittgenstein's *Nachlass*, as described before, it is clear that such a commentary ought not to treat its source as if it had presented a synchronic view of equally strong convictions. Since a commentary has to deal with a text indicating changes in Wittgenstein's net of convictions, it should in particular try to work out and explain these changes and give reasons why some routes were followed, some rejected and others never tried. Although philological observations are still the basis, such an investigation is built of systematic evaluations of arguments. Accordingly, a commentary might, but does not necessarily need to analyse the text paragraph by paragraph. Thus, a hypertextual structure allowing a flexible (re-)arrangement of passages, which was impossible to achieve with either traditional printed editions or even a smart Web-site, seems to be the best form to investigate sources of the kind of Wittgenstein's *Nachlass*.

2.2 The Integration of Information

Let us now turn to the second challenge for the humanities: the integration of widely scattered information resources.

Knowledge has always been a mixture of the acquaintance with certain content and the methodological competence to use various devices for the storage and processing of information. With the advance of digital storage

and communication technology more information is in principle available while the tools for its processing are being refined. Hence it becomes, even in the humanities, less crucial to amass a lot of detailed knowledge and all the more important to improve the competence of using digital information systems.

This means that net-based forms of communication favour the division of labour even within the humanities. Small bits of information can be combined more easily into new complex views of a subject.

When we publish something on an Internet database and link it to other information, we generate a net of relations that are superior to traditional cross-references used in books or journal articles because those links can be traced by computers. A computer can analyse such a net of references and thus reveal unimagined relationships and provide us with new insights that would have otherwise remained clandestine. Designing data formats and developing computer programmes for such purposes might sometimes contribute more to the advancement of knowledge in the humanities than composing long books. Where information technology changes conventional hermeneutic processes, there we should treat this as an essential and not an exterior contribution to the humanities. In this respect information technology is more than just an auxiliary discipline.

3. Practical Conclusions

3.1 Institutional Conclusions for the Humanities in General

The humanities cannot expect all the technical instruments for their research to be provided for them by others. They need tools and means adequate to their peculiar research agendas and objects of investigation. Of course that does not mean that the humanities should not use whatever technology is at hand, but the more autonomously they can act, the better. It is therefore absolutely imperative to establish a series of research centres within humanities institutions dedicated to information and communication technology.

In contrast to other fields of digital communication, the primary research instruments of the humanities, in particular editions and reproductions, require an extraordinarily high level of accuracy in data collecting

and encoding because every inexactness or gap here, increases the probability of misinterpretations later.

Specific new challenges arise also from the option to cross-link such digital editions and reproductions over the Internet. Their long-term availability and accessibility must be reliably guaranteed, procedures of authentication and quality control need to be adopted, or developed and implemented. It is especially important to improve the method of cross-referencing data in open systems like the Internet, where new resources are constantly being added while others are modified or even disappear. Furthermore, we need to investigate how digital primary sources can best be supplemented by adequate tools (for example digital equivalents to conventional concordances and encyclopaedias) and how disciplinary discourses that have taken place so far in monographs and journals can be replicated on the Internet and, as well, be diversified and broadened by new forms of net-based communication. Finally with regard to practical implementation, one is confronted with the task to design user-friendly applications so that even someone who does not possess in-depth knowledge of information technology nevertheless can cope with them easily.

So far, these networking opportunities have not been widely taken up by scholars (with the exception of academic libraries that have created large networks of catalogue databases). The use of the Internet in the humanities commonly follows the paradigm of conventional forms of publication: Often it is used just for the presentation of digitised material on an individual institutional Web-site. Accordingly, most of the research in humanities computing is conducted either individually or by very small project teams.

A few universities have established service units that consult and assist scholars who want to start a digital research project. However, there are not many research centres in the world that focus on the topics of humanities computing in general, for example by developing standards, tools and applications for cross-project use. It corresponds, therefore, that humanities computing is institutionalised – at least in Germany – as a mere appendix of conventional chairs of history or literary studies.

But if it is correct that the described research fields are of great and fundamental importance for the humanities, then it is absolutely essential to draw institutional conclusions from this insight. That means that a professional discipline of humanities computing should be established that combines information technology, (digital) philology and net-based knowledge communication.

3.2 Conclusions for Philosophy in Particular

Turning now from the humanities in general to philosophy in particular, I want to return to my reflections from the beginning of this article. I had argued that analytical philosophy as well as hermeneutics did not care much about the media. But in order to overcome this deficits it is not sufficient to just examine individual media phenomena according to the model where a medium is treated only as a vehicle for messages. The task of integrating widely scattered digital information resources, which I mentioned before, illustrates that for a proper understanding of media it is imperative to study their interaction among themselves and with all the other factors that determine their use. This means that a solid media philosophy and theory must account for the complete interplay of diverse media with and within all spheres: individual, social, economical, political and institutional.

As philosophy finds itself to be part of this great game, one should always remember that it is impossible for it to look at media from a completely neutral standpoint. Our ability to develop and spell out a thought or a theory is limited by the characteristics of the media at hand – unless we enhance them.

One may object that philosophy is primarily concerned with the analysis and development of new systematic descriptions of the world or the self. However, if it is correct that descriptions cannot be totally separated from the media they appear within, questions, for instance, about the features of the software tools and standards we are using for philosophising in digital media are as important to our philosophy as the literary form in which we present our thoughts when writing a book. Therefore information technology is not only an object for philosophical reflections, but also an agent that determines philosophy basically and essentially.

Acknowledgement

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Notes

1. Quine’s two most important contributions from the mid 20th century are Quine (1951) and (1960). A good overview of his later philosophy is presented in Quine (1990).
2. See Austin (1955).
3. In the German original: “Sprache als Medium der hermeneutischen Erfahrung”, see Gadamer (1960/1990), p. 387.
4. For more information about the “Tracing Wittgenstein” project see Hrachovec/Köhler (2002), Köhler (2006) and the Web-site of the project at [<http://wittgenstein.philo.at/>].

(Re)-Constructing the Semantic Architecture of Wittgenstein's *Vermischte Bemerkungen* by Syntactic Analysis

KERSTIN MAYR, INNSBRUCK

1. Introductory remarks

In the context of a cooperative project between the Brenner-Archive at the University of Innsbruck (FIBA) and the Wittgenstein Archives at the University of Bergen (WAB), a computer supported qualitative analysis of Wittgenstein's *Vermischte Bemerkungen/Culture and Value* is being carried out.¹ This is done with GABEK (*Ganzheitliche Bewältigung von Komplexität / Holistic Processing of Complexity*, see <http://www.gabek.com/>), a method based on the theory of linguistic *gestalten* (Zelger 1999), and its computer implementation WinRelan (*Windows Relationen Analyse*). By a content/semantic analysis of the material an integrated view of individual aspects of Wittgenstein's originally scattered and often private notes and remarks on various topics, which were assembled, edited and published by von Wright in *Culture and Value* (1994), could be obtained. Wittgenstein is in no way the editor but yet the author of this compilation which is nevertheless treated to a holistic analytical approach. At best this investigation might reveal the intentions of von Wright, were it not for the fact that he did confess to be uncertain about the desirable outcome.

It is the analysis's basic intention to look and investigate philosophically relevant semantic fields (patterns) within the remarks from which we could then gain semantic knots acting as thematic anchors for further investigations in Wittgenstein's *Briefwechsel/Complete Correspondence* (BW) and the *Bergen Electronic Edition* (BEE).²

2. What a text analysis can do

Georg Henrik von Wright saw himself faced with the problem of the arrangement of these numerous notes scattered among the philosophical

and biographical texts Wittgenstein had left. In his foreword to the first edition of *Culture and Value* (1977) von Wright wrote:

It was a decidedly difficult task; at various times I had different ideas about how best to accomplish [the selection and arrangement of these remarks]. To begin with, for example, I imagined that the remarks could be arranged according to the topics of which they treated – such as “music”, “architecture”, “Shakespeare”, “aphorisms of practical wisdom”, “philosophy”, and the like. Sometimes the remarks can be arranged into such groupings without strain, but by and large, splitting up the material in this way would probably give an impression of artificiality. (von Wright 1977, ix)

In some cases it seems difficult to decide what Wittgenstein was referring to and therefore any kind of classification or attribution to certain topics only by reading through these notes would lack any rule- or criteria-based investigation. This is now where computer based text analysis comes into play. A text analysis tool could be used to identify the context and importance of text units. Thus, we try to investigate any inherent semantic and topical structure of this seemingly loose collection applying clear and transparent criteria. We are not primarily interested in analyzing the circumstances under which the *Vermischte Bemerkungen* were written and later combined. The texts themselves will be our first and only fields of investigation – at least at this stage. Again, this is to say that even though Wittgenstein was not involved in this compilation it deserves all the care due to a coherent product.

It seems a strange thing to concede that all these remarks are taken out of context and proceeding to treat their aggregation as a significant whole. However, despite being a loose collection, the textual analysis of these remarks assembled in *Culture and Value* could result in something like topical signposts hinting at recurrent themes in Wittgenstein’s corpus. In this way we could gain access to clusters in the corpus which may be indicative of philosophical topoi hitherto uninvestigated as such. Thus, once a first analysis will have been completed, framing and re-framing into the larger context of text genesis as well as Wittgenstein’s writings and letters should follow.

With Wittgenstein's works in general and with the *Vermischte Bemerkungen* in particular the question is again one of textuality. The question what constitutes a text (by Wittgenstein), is becoming even more virulent with the *Vermischte Bemerkungen* since the text itself was not arranged by Wittgenstein but edited posthumously. The problem, now, is to locate this text's (or rather these text units') central cores holding the essentials of its meaning(s). Before any attempt at an interpretation of this text can be made, the semantic "hot spots" have to be identified. Once uncovered, what we would get are various semantic fields and meaning-structure(s). Frequency as well as the degree of cross-references between different semantic fields may indicate probable semantic and thematic "centers of gravity". Thus, what a semantic text analysis can do, is looking for a "textual architecture" and trying to hint at crucial text criteria such as cohesion, coherence, intratextuality and – to some extent – intertextuality within *Vermischte Bemerkungen*. So we could finally reveal one or more thematic "red threads" and an arrangement of the remarks according to various topics would be less artificial or at random.

Any interpretation of the text arises in that the topical building blocks (semantic fields) are understood as the meaning-structure(s) of the text. Metaphorically speaking, every city (text) consists of various houses (semantic fields) and its inhabitants (keywords), performing with inhabitants (keywords) of other houses (semantic fields) all contained within one and the same city (text). Each of them is of different importance in the structure of the text. However, content analysis applies a set of techniques to a given text to determine the following:

- the identity of the main houses and inhabitants (semantic keywords and fields),
- the relations in which they stand to each other (constituting semantic networks),
- the hierarchy of these relations and how they evolve (forming the textual framework).

Content analysis consists in revealing the foci within a certain text, i.e. its meaning. This necessarily implies two things. First, there must be a theoretical conception of the text describing both the textual organization of the things said as well as the structural organization of the thought-processes of the author. Secondly, this implies the use of a tool which rigorously tries to exclude the subjectivity of the investigator to a maximum extent. In the case

of the *Vermischte Bemerkungen* both can best be done by rule-based text-coding. Since the actual version we have is a mere construct, the question is if the various text fragments may hint at a larger underlying textual (and philosophical) conception or “hypertext”, which would finally legitimate the appliance of the concept of “text” to the *Vermischte Bemerkungen*.

3. Applying GABEK/ WinRelan to the *Vermischte Bemerkungen*

The advantage in using the GABEK/ WinRelan method lies within the fact that it allows a hierarchically structured presentation of a highly complex text and its network layers. The main objective of this analysis is to clarify and highlight content-related (semantic) interdependencies and intervening variables – hypotheses on interdependencies can be generated in a further step. Whereas other semantic text analysis tools are designed to help the researcher identifying particular components of natural language (morphemes, words, syntax, semantics etc) and call upon a number of pre-defined rules, GABEK is a method in which themes (or classes of concepts) as well as causal inter-relations among themes are encoded. The method involves a three step encoding process.

3.1 The encoding process

3.1.1 Coding of Keywords

When using WinRelan the first step is to divide the text up into chunks, which are then transferred onto so called index cards (see Fig. 1). Each card should include a semantically closed statement³ whereby the length of text units represented on these cards is determined by the number of keywords. Keywords are words that constitute the semantic content of a text and are – in general – easily identified.

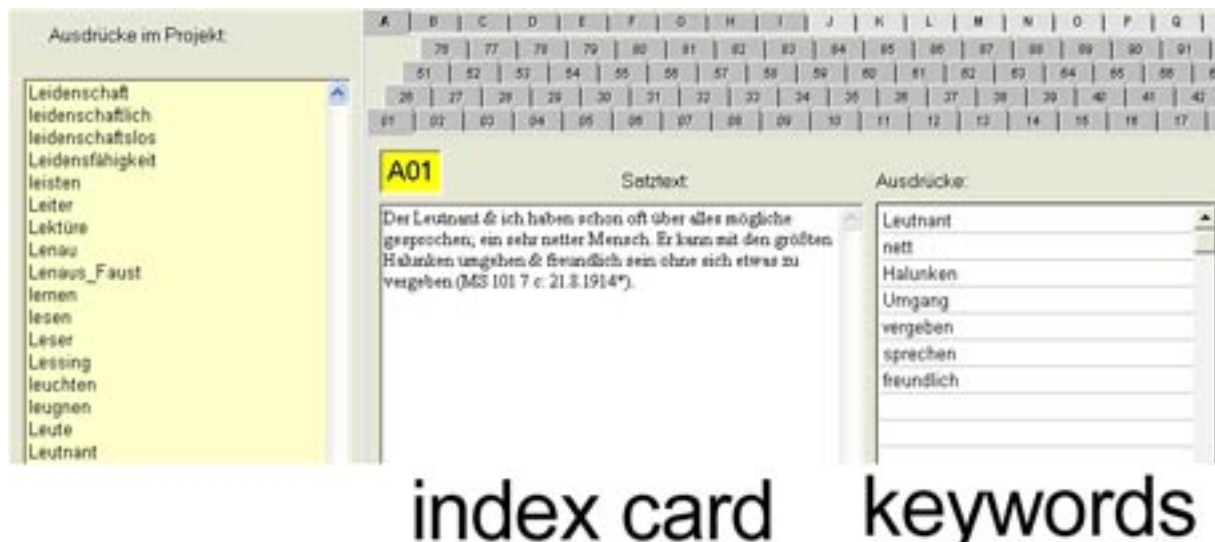


Fig. 1: Index card and corresponding keywords

What we finally get is a kind of concordance, so we can, for instance, list all words in alphabetical order (see Fig. 2) which are repeated in the text two or more times, or create a chart showing the words in the text ranked in order of their frequency of occurrence (see Fig. 3).

Gesamtliste	Reduzierte Liste	Synonymliste				
1	ergründen	F20				
3	erhalten	C77	F63	G13		
1	Erholung	G86				
5	erinnern	B32	B83	B87	F25	G77
4	Erinnerung	C52	E28	G64	G65	
1	erkaufen	D45				
3	erkennen	A02	F80	I02		
3	Erkenntnis	C29	C77	E71		
13	erklären	A61	E11	E63	F67	F92
14	Erklärung	B59	C45	E27	E63	F90
1	erlauben	A65				
5	erleben	C15	E26	E27	E30	F93
4	Erlebnis	E24	E26	F91	F96	
1	Erlebnisinhalt	F96				
1	erlebt	H46				
1	erleichtern	E67				
1	erlernen	G37				
1	erleuchten	C19				
1	erliegen	A27				
1	erlösen	C67				
2	Erlösung	C29	C69			

Fig. 2: Keyword list in alphabetical order

Gesamtliste		Reduzierte Liste	Synonymliste				
141	ich	A02	A06	A13	A17	A19	
64	Menschen	A24	A32	A33	A40	A62	
52	glauben	A21	A93	B54	B60	B85	
51	Mensch	A02	A08	A17	A39	A41	
51	sagen	A08	A25	A28	A32	A56	
45	verstehen	A02	A21	A59	A60	A61	
44	Leben	A34	A35	A95	B07	B08	
43	sehen	A20	A25	A33	A34	A35	
39	denken	A09	A15	A19	A20	A31	
37	schreiben	A55	A59	A60	A75	B06	
33	gut	A06	A07	A17	A21	A22	
32	Gott	A35	B50	B76	C40	C50	
32	Musik	A26	A46	A71	B37	B42	
31	andere	A09	A37	A63	A81	A86	
30	Sinn	A61	A83	B14	B31	B41	
29	Zeit	A19	A47	A49	A50	A70	
28	Gedanken	A57	B23	B40	B45	B62	
28	Sprache	A02	A75	A82	A88	A89	
26	Ausdruck	A03	A47	A49	B98	C58	
25	zeigen	A59	A82	A85	A86	A95	
25	scheinen	A37	A68	A90	B23	B49	

Fig. 3: Keyword list according to frequency

Both lists derive their power for analysis from the fact that they allow us to see every place in a text where a particular word is used and therefore help the researcher to anticipate relevant semantic fields for a subsequent detailed analysis.



Fig. 4: Analysis result: keyword list

As a rule one would have between three to nine keywords on each index card⁴, which would mean approximately three sentences⁵. As GABEK/WinRelan is mainly used for analyzing spoken text data, the keywording and coding of Wittgenstein's dense and highly complex remarks turns out to be quite a challenge. Where one would normally have several sentences on one index card, with Wittgenstein it is often necessary to have only one or two sentences on one card. As long as we are merely aiming at an identification of keywords in order to compile a keyword list (e.g. for a concordance or register), showing the frequency in usage of specific terms, this is fine. One could now argue that in order to generate a keyword list ordered by the frequency of occurrence, we would not have to use such a time consuming method; we could just run a simple word search program to create a concordance. The problem with this kind of analysis is that such a tool would only look for the occurrence of a specific term, e.g. "Geist", but would not distinguish between its different meanings. Thus, such a list of keywords out of context would not meet our needs.

Although we do not fully stick to the GABEK rules with the chunking of text units, we have to follow the rules in regard to further data processing. Now this is where WinRelan meets its limits. Especially when it later comes to building linguistic *gestalten*, i.e. doing a strictly rule-based summary of the contents of those index cards sharing again five to nine keywords, index cards with too many sentences and equal or different key-

words respectively will turn out to be useless. Why? This has to do with the algorithm used for the virtual grouping of semantically fitting index cards. We would either get too many “virtual” piles of index cards which would not help us to cluster interrelated terms or topics or we would get too large piles which would mean that we were too imprecise in coding. The latter would only show that all terms or topics are interrelated in one way or the other but that would not help us to find patterns of relevant⁶ inter-relations and key concepts.

3.1.2 Coding of Evaluations

After all keywords have been coded, two more codings – based on the first one – have to be done. In a second step of the coding process an evaluation coding procedure has to be executed. This means that we are looking for keywords which are either positively, negatively or neutrally⁷ connotated. Therefore we will create two lists; one in which we mark how keywords referring to real phenomena, states etc. are evaluated and another in which we mark evaluations of hypothetical states.

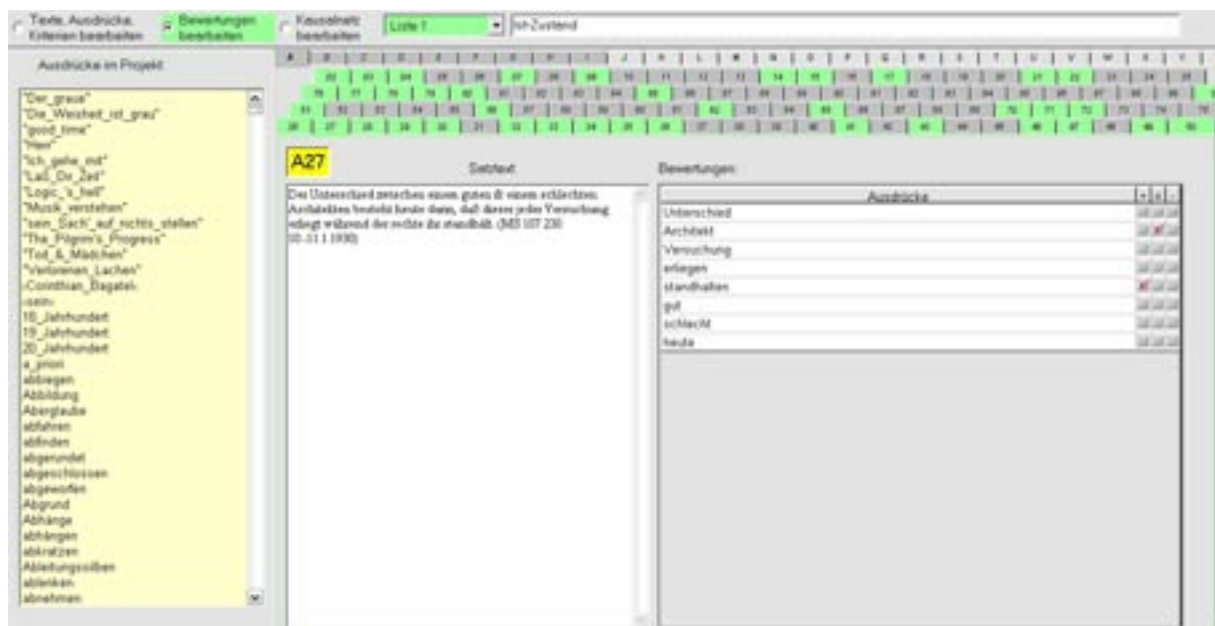


Fig. 5: The evaluation analysis of the real situation according to A27. The current situation is judged positively in the text regarding “standhalten”.

Now, why should we like to have these lists of evaluations? If these operations are executed on all the texts available, then we could receive an infor-

mative and differentiated estimate of the current or desired status of certain states and phenomena. So we could argue that Wittgenstein held rather a positive attitude towards e.g. “Glaube” (religious belief), “Dummheit” (stupidity, inanity) or “Natur” (nature) and a predominantly negative attitude towards “Wissenschaft” (science), “Mahler” and “Philosoph” (philosopher). Although such an analysis of evaluations might have been of interest at first sight – since the title holds the term “value” –, the results of the coding of evaluations for the keywords identified in *Vermischte Bemerkungen* are of no significant (quantitative) relevancy. Thus, although one might think that the title could allude to “value” in the sense of setting the amount of value of a certain topic or idea, it is rather that the word indicates value in regard to moral principles and beliefs or accepted standards of a social group. The latter assumption could be backed up by looking at the context of the word “value” within *Vermischte Bemerkungen* themselves.

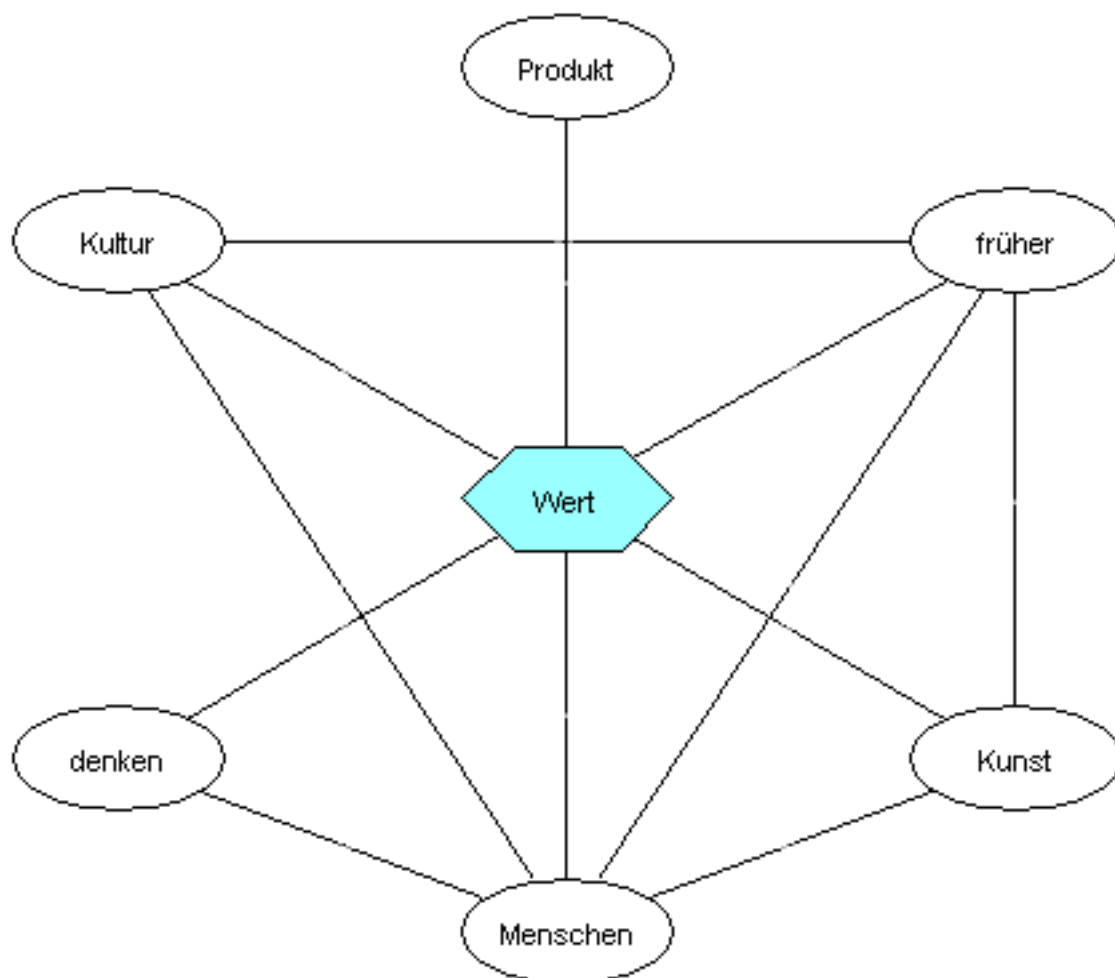


Fig. 6: Association graph to “Wert”

As can be seen from Fig. 6, in which we see a network of terms co-occurring with “Wert”, the context suggests that “value” relates to social terms and fields. The graph displays with which other words the word “Wert” (“value”) co-occurs several times. Although the scheme (Fig. 6) does not yet shed light on the quality (i.e. in which way these words – and the concepts they allude to – refer to one another) of their co-occurrence, it gives first information on the closer context of a word in use – what is of special importance when dealing with Wittgenstein, who emphasised that the meaning of a word is given by its use in a language game in a concrete environment.

3.1.3 Coding of Inter-relations and Inter-dependencies

Apart from keywording and the coding of evaluations, one final coding has to be done if we are interested in the nature of co-occurrence of our coded keywords. Usually this last step of the coding process aims to mark “relations” between keywords. Now, what is meant by the “relation”, “inter-relation” or “inter-dependency” between keywords? These terms refer to the syntactic-grammatical function and order of keywords within a text unit (on one and the same index card). Take the following example: Index card A07 contains the sentence “Ein gutes Gleichnis erfrischt den Verstand (MS 105 73 c: 1929)”. What we would do now is marking those keywords in a square matrix that on a syntactical level show “influences” on or “relations” to other keywords. Mostly we would code agent-patient-relations. These keywords contained in a record sheet serve as line and column designations. If in a text unit an “influence” (thus a thematic “relation”) is assumed, then the assumed influence is entered in the line of the influence variable (keyword) and the column of the influenced variable as “+” or as “-,” according to whether the influence is a positive or a negative one. In our example, mentioned above, we would then code⁸:

	A (Gleichnis)	B (gut)	C (erfrischen)	D (Verstand)
A (Gleichnis)				
B (gut)				
C (erfrischen)				
D (Verstand)				

Fig. 7: Matrix recording the “influence-on”-relationship between the keywords “Gleichnis” and “Verstand” on index card A07.

This chart shows that within a certain text unit (contained in one index card) the relation between the keywords “Gleichnis” (“simile”, “analogy”) and “Verstand” (“intellect”) does exist and that it is a positive one.

Normally these codings in GABEK would be referred to as causal relations. However, with the *Vermischte Bemerkungen* mere causal coding would not suffice. If we had only marked causal dependencies, it might not be illuminating when it comes to analyzing relations between keywords occurring within *Vermischte Bemerkungen*. So we decided to mark all relations that could be defined as: I “keyword 1”, “keyword 2”. In order to isolate inter-dependencies from the textual data, the electronically captured text units on the index cards must be read again and coded in a new way. The questions we ask to the text in order to find out about the nature of the relations between keywords are: Does the text provide hints that I “keyword 1”, “keyword 2”? GABEK also allows for questions to find out whether the text shows that one keyword A leads to the increase or decrease of another keyword B. Applicable to the coding of inter-dependencies are among others (as mentioned in Oberprantacher/Zelger (2002)):

- “quantitative relations (in the form of ‘the more A, the more B’),
- real relations between keywords (‘A has an effect on/ influences B’), qualitative relations specification (‘if A improved, then the quality from B takes too’),
- statistical generalizations (‘if A, then mostly also B’ applies) and many others.”

Additionally, we could distinguish between influences that have either a favorable or an unfavorable effect on another variable. The coding of inter-

dependencies finally leads to the description of complex relations. Two lists are generated: the “inter-dependency list” and the “list of inter-relations”. Whereas, the inter-dependency list provides information on the amount of effects between keywords, the list of inter-relations shows more about the nature of these inter-dependencies themselves. Although there are other features relevant to a comprehensive data analysis, we will only go into one more important detail for reasons of comprehensibility. The final step important for our investigations is the generating of inter-dependency network graphics, which are based on the coding of inter-relations. Researchers may, for instance, choose any keyword from the keyword list and create a network by expanding it with keywords showing at least two inter-relations with the starting keyword. Let's take the following example, starting with the keyword “Kultur” (“culture”): Previously executed projects have shown that inter-dependency networks representing inter-relations contribute substantially to comprehensive textual analysis.

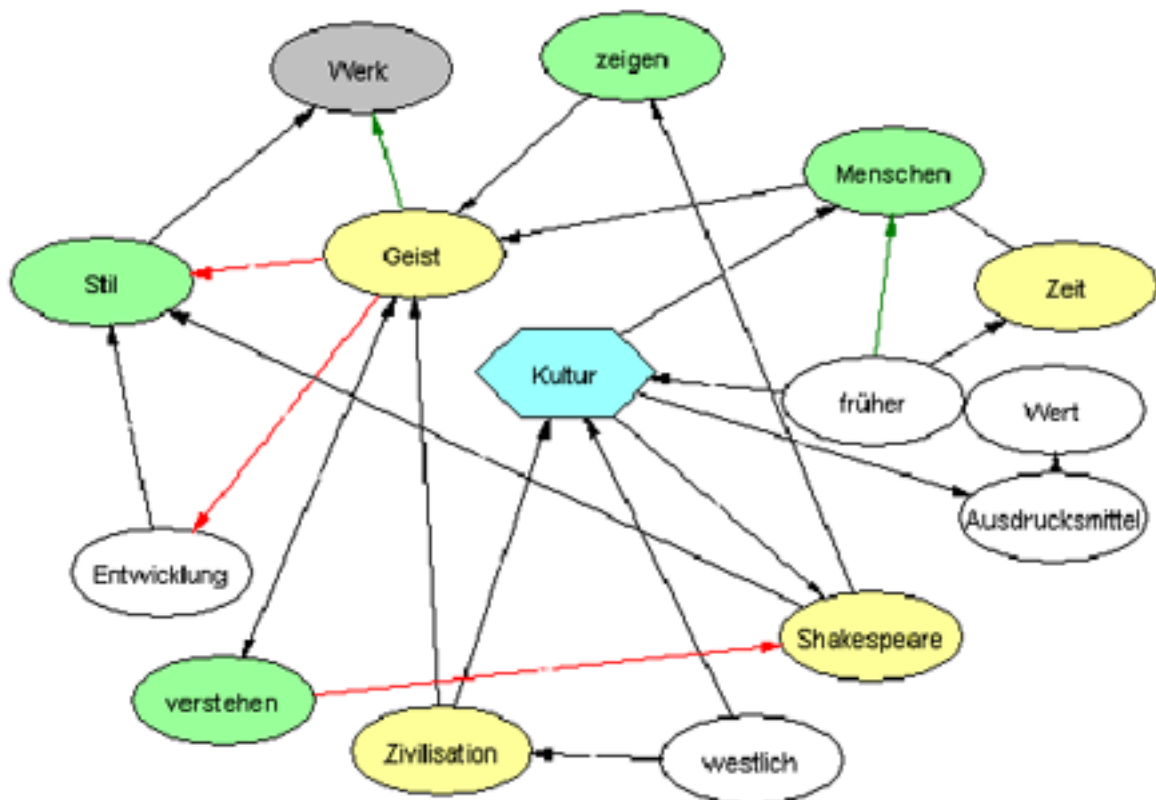


Fig. 8: Inter-dependency network graphic starting with “Kultur” (“culture”)

Now, what could this graphic show? Use of colors in the graphic can illustrate the position of a keyword in the context of other keywords (I “keyword

1”, “keyword 2”). One color could e.g. be used to show that a keyword repeatedly co-occurs with other keywords by showing influence on them. From this graphic researchers could always trace back the original contexts of keywords by going back to the index cards onto which a text unit was copied (cf. Fig. 9 below).



Fig. 9: Inter-dependency network graphic of “Kultur” (“culture”) with index card references

What this and similar graphs can indicate, is the semantic structure of associated keywords (representing conceptual fields) in that it shows the frequency of I “keyword 1”, “keyword 2”; this is signified by the amount of arrows pointing at a certain keyword or pointing away from it. If more arrows target at an item than lead away from it, it would be defined as an “aim”. However, if a keyword shows more influence on other items than it shows influences on itself, we would speak of it as a “measure”. Now, if the number of arrows depicting “influence-on-relations” and arrows illustrating “being-influenced-relations” is equal, the affected keyword is characterized as a so called “intervening variable”. Intervening variables are keywords signifying a linkage between two (or more) other key concepts.

The network above (Fig. 9) shows that keywords like “Menschen”, “zeigen” and “verstehen” are not addressed as “aims” or clear “measures”, but display mediate impact on other variables (mostly not sufficiently recognized), such as “Shakespeare”, “Leidenschaft” or “Geist”. Some other keywords, such as “Geist”, “Zivilisation” or “Zeit”, stand for “measures” and are thus affecting other concepts either positively or negatively. Again a different group of keywords stands for concepts that Wittgenstein in his remarks repeatedly addresses as desirable; they are therefore definable as “aims” (e.g. “Werk”, “staunen” et.al.).

Such an analysis and identification of inter-relations of items (keywords), conceptual fields and topics as well as semantic inter-dependencies and networks – which are achieved through the development of a rule-based network of data (units) – are needed to generate both a more profound knowledge and an understanding of the semantic structures of this (re-)constructed Wittgenstein text. This knowledge expresses itself in the unique character of its organisation and structure and can help to build the basis for further in-depth investigations and analysis concerning specific topics related to *Vermischte Bemerkungen*. In coherence with the core objectives of the analysis of the German text version (*Vermischte Bemerkungen*), an encoding of the 1st and 2nd English edition (*Culture and Value*) might be interesting for the purpose of comparison and exploration in terms of textual semantic similarity and deviation¹⁰.

Using GABEK/Winrelan we can do more than clarifying terms, showing frequencies or representing inter-dependencies. We can achieve a clear, holistic overview of the textual data. In order to do so we need to put our data into a hierarchically ordered “*gestalten* tree”.

3.2 Creating linguistic *gestalten*

This is done by running a cluster analysis on all keywords identified at least twice on at best five to nine index cards.¹¹ The cluster analysis is a built-in feature (in WinRelan) and helps the researcher to generate virtual piles of index cards sharing again five to nine keywords. However, if there are too many index cards with too many different keywords (cf. Zelger 1996, 11), one would get too many groups, i.e. too many topical threads so that an identification of more and less prominent themes would be impossible. On the other hand, if the index cards share too many keywords, we would get too few piles and it would seem as if all topics were equally prominent; either is problematic. Because when it comes to summarizing the content

represented on these grouped cards according to specific syntactic and semantic rules, we would either get a too comprehensive summary or only a superficial one. The summaries (*gestalten*) are semantic implications of the grouped cards and build the basis for further grouping and summarizing on the next higher level. What we get are so called *hyper-gestalten*. This process is repeated until we have no more groups to summarize. The final product is a *gestalten-tree*.

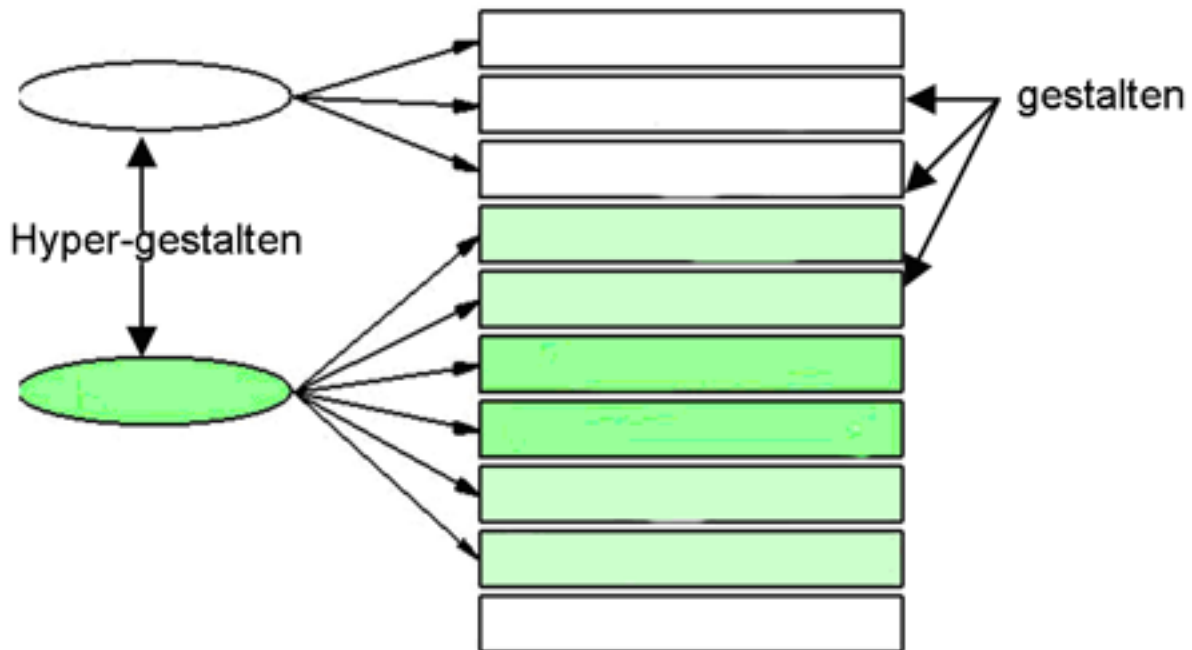


Fig.10: *gestalten-tree*

Any careless or deviant coding at an earlier stage affects the quality of the later analysis. Thus, the decision on how many sentences are to be coded on one index card is a crucial one.

So finally, these findings can provide the basis for further investigations concerning such questions as the following:

1. Can thematic/semantic structures that have been identified in the course of this analysis process be useful for further investigations? (And if so in what respect?)
2. What can be captured (is it useful?) and what cannot be captured (blind spots)? Is this method of analyzing texts in order to “prepare” them for further research balanced in terms of the amount of time needed and the actual output?

3. Is there the chance to discover semantic inter-relations topical patterns that would otherwise be overlooked or neglected?
4. Could one find patterns when e.g. analyzing text under a certain repeat? E.g., if one wanted to analyze all occurrences of a certain keyword (representing a topic) in its various contexts within Wittgenstein's writings, would one get useful structures etc. which could provide access to an understanding of the topic from a new perspective? (Would that be helpful for understanding a certain topic in Wittgenstein?)

4. Conclusion

Since the GABEK-analysis of *Vermischte Bemerkungen* has not yet been finished, the questions just mentioned cannot be fully answered at the present state. What can though be said, is that first tentative assumptions regarding thematic patterns or semantic structures can be made. These could become relevant if we wanted to investigate whether there are topic patterns that would justify to put those remarks into one volume. All we have tried so far is looking at *Vermischte Bemerkungen* from a different angle by applying GABEK/ WinRelan. Within this context, we, of course, have taken account of the fact that all remarks were originally written by Wittgenstein himself, but also of the fact that these remarks do not at all constitute a complete piece of Wittgensteinian text. It is neither our task nor our aim to solve the problem of "what is a Wittgenstein text". So, we try to (re-)construct it by first chunking it, analyzing its components and rebuilding it anew. At best that will show us that there is a point to those remarks and that they are maybe not that incoherent as they may seem at first sight.

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Notes

1. See the project Web sites at http://www.uibk.ac.at/brenner-archiv/projekte/wittg_vermischtes/index.html and http://wab.aksis.uib.no/wab_fwf-cv.page.
2. *Wittgenstein's Nachlass: The Bergen Electronic Edition*. Edited by the Wittgenstein Archives at the University of Bergen. Oxford: Oxford University Press 2000. *Ludwig Wittgenstein: Gesamtbriefwechsel/Complete Correspondence: The Innsbruck Electronic Edition*. Edited by Monika Seekircher, Anton Unterkircher and Brian McGuinness. Charlottesville: IntelLex Corporation 2005.
3. Hereafter referred to as “sentence”.
4. This GABEK rule (cf. Buber/ Zelger (2000), p.117) is based on the findings of George A. Miller (1956) according to which a person can remember 7 (up to 9) terms.
5. Here, the term “sentence” does not refer to a linguistic sentence but to a meaning unit.
6. The relevancy of terms and topics is determined by their frequency (quantity) as well as by their interrelations (quality).
7. I.e. a term is connotated positively as well as negatively.
8. Compare Oberprantacher/ Zelger (2002).
9. I_{xy} : x shows influence on y.
10. However, if such an analysis were undertaken, researchers would have to pay special attention to the difficulties arising with the translation of texts, especially philosophical texts.
11. A cluster analysis is used to classify objects (in this case “index cards”) and groups them according to the (number of) keywords they share. Clustering is a common technique in data mining using mathematical algorithms for distance measures by which the proximity (similarity) of the objects in question is calculated.

Digital Wittgenstein Scholarship: Past, Present and Future

DAVID G. STERN, IOWA

1. Wittgenstein scholarship in the pre-digital era

About twenty five years ago, I began work on a dissertation on the development of Wittgenstein's philosophy. I wanted to know more about how the Tractarian "final solution of the problems" of philosophy unraveled after Wittgenstein's return to philosophy in 1929, and I expected that a close study of his writing on mind, meaning, and self during the 1930s would cast light on the treatment of those topics in the *Tractatus* and *Philosophical Investigations*. The title of the resulting dissertation, "Wittgenstein's 'battle against the bewitchment of our understanding by means of language'", a quotation from *Philosophical Investigations* §109, was meant to indicate my focus on the way that Wittgenstein thought of language as both the means of our bewitchment, and the means by which we could struggle against bewitchment. My aim was to approach that already familiar theme in a fresh way by looking at how that struggle changed and developed as he moved away from the *Tractatus* and toward the *Philosophical Investigations* during the so-called "middle period". I soon found that I needed to look at the manuscript sources of the published material, not only because the relationship between the published text and the *Nachlass* material was controversial, but also because earlier drafts often contained views that Wittgenstein later criticized, and the process of revision – what was included, what left out, and what revised – provided an access to the development of Wittgenstein's philosophy that could not be gained from the published material alone.

As Hacker has observed, the *Nachlass* is "an indispensable tool for the interpretation of [Wittgenstein's] thought. For there one can find the dozens of pages of struggle that lead up to, and shed light on, the one or two sentences constituting the remark that is the final expression of his thought on the matter." (Hacker 2001, viii) However, the precise nature of the relation-

ship between the “struggle” in the *Nachlass* sources and the “final expression” has become one of the principal topics of debate among *Nachlass* interpreters. The first book to make extensive use of the *Nachlass*, Hallett’s *A Companion to Wittgenstein’s “Philosophical Investigations”* (1977), provided a wealth of references to *Nachlass* sources, including not only earlier formulations of passages in the *Philosophical Investigations* but also passages where Wittgenstein set out views that sharply contrast with his later thoughts. However, Hallett for the most part left it up to the reader to assess the extent of the continuities and discontinuities. Starting with the first volume of Baker and Hacker’s *Analytical Commentary on Wittgenstein’s Philosophical Investigations* (1980), most of the work on the *Nachlass* published in the 1980s and 1990s turned on identifying the first formulation of “middle period” positions that could be attributed to the *Philosophical Investigations*, and so stressed the continuities between Wittgenstein’s writing in the 1930s and the *Philosophical Investigations*. More recently, a number of interpreters, myself included, have challenged this methodology, arguing that a focus on continuities in wording can lead one to overlook deep discontinuities between the use of those words in earlier and later contexts (see Schulte 2002, Pichler 2004, and Stern 2004).

2. Digital Wittgenstein scholarship: a brief history from a personal perspective

Until the late 1990s, with the publication of the Bergen edition of the Wittgenstein papers (Wittgenstein 2000; the first volume was published in 1998) the only public access to the *Nachlass* was by means of microfilm, or transcripts of unpublished sources of the *Philosophical Investigations* produced and circulated by G. H. von Wright, assisted by Heikki Nyman and André Maury. Indeed, it was not until the late 1960s, with the production of the “Cornell” microfilm of the *Nachlass*, and the publication of von Wright’s catalogue and guide to “The Wittgenstein Papers” (1969, revised version in Wittgenstein 1993, 480-510, and updated in Wittgenstein 2003, 407-410), that research on the Wittgenstein papers became possible. Despite the difficulties involved in working with this material, the promise it held for a deeper understanding of Wittgenstein’s work meant that a remarkably large number of books were written during the 1980s that made extensive use of it. These included the first volumes of Baker and Hacker’s

Commentary on the Philosophical Investigations (1980, 1980a, 1985 and Hacker 1990; see also 1984) Hintikka and Hintikka's *Investigating Wittgenstein* (1986), Hilmy's *The Later Wittgenstein* (1987), McGuinness's *Young Ludwig* (1988), Monk's *The Duty of Genius* (1990), and a number of essays by Nyíri on the emergence of Wittgenstein's philosophy (1986, 1992).

While various electronic transcriptions of large parts of the *Nachlass* were produced in the 1980s, none of this material was freely available.¹ During the early 1990s, I did, however, have access to the first digital edition of Wittgenstein's published work, a package based on the published texts, running in MS-DOS and supplied on a dozen or so floppy disks, that permitted sophisticated statistical analysis of word frequencies, produced by Alastair McKinnon. While the statistical analysis struck me as an excellent example of what Jaakko Hintikka characterized as "the clear danger that Wittgenstein research, or part of it, will be directed by the increased reliance on computers into philosophically unimportant directions" (Hintikka 1991, 197), it was an exciting step forward to be able to search the published materials for key terms. The Intelix edition of that transcription of Wittgenstein's published work, the first published digital Wittgenstein text, was released in 1993, packaged with Folio Views. Because Folio Views has been used in the Past Masters series of electronic editions of the works of many of the most important figures in the history of philosophy, which have been bought by many scholars and university libraries, it is a familiar environment for many philosophers. A later version of that software was also used in the Bergen electronic edition of the *Nachlass*.

Like many other researchers in the humanities in the early 1990s, I became an enthusiastic evangelist for the coming digital turn. I first visited the Bergen Wittgenstein Archives in the summer of 1993, just as I was proof-reading the book based on my dissertation, *Wittgenstein on Mind and Language* (Stern 1995), one of the last books on the Wittgenstein *Nachlass* written before the Bergen edition of the Wittgenstein papers became available. I gave my first talk on "Computer based research on Wittgenstein" in 1992, and presented a paper discussing the prospects for a "complete edition of the Wittgenstein papers" at the Kirchberg symposium the following year (Stern 1994). In my Kirchberg paper, I predicted that the "electronic edition of the Wittgenstein papers will make it possible to look at his writing as an interconnected whole, rather than as a discrete number of self-contained texts. Electronic text is not merely a new way of reading traditional texts; as a hypertext, it belongs to a new medium that is as dissimilar from

printed text as a printed text is to a manuscript or conversation” (Stern 1994, 266-7). Having spent much of the previous ten years acquiring the knowledge and expertise needed to explore the connections between Wittgenstein’s unpublished writings, I could see that an electronic edition would soon enable anyone with a serious interest in this material to carry out comparable research far more rapidly and efficiently. With such researchers in mind, I wrote a guide to the Wittgenstein *Nachlass* for the *Cambridge Companion to Wittgenstein*, under the title, “The Availability of Wittgenstein’s Philosophy.” There, I summed up the promise of the digital turn for Wittgenstein scholarship in the following terms:

While the links that animate hypertext are familiar, and can, at least in principle, already be followed by a sufficiently skilled reader, in practice, it promises to change our understanding both of Wittgenstein’s way of writing and his philosophy. Readers of the electronic edition will be able to compare different stages of Wittgenstein’s revisions, systematically review his use of key terms, or search customized concordances. Questions that could not have been answered before will be answered in less time than it takes to ask them. Readers will approach Wittgenstein’s writing in new ways, exploring connections and relationships that have received little attention in the past. (Stern 1996, 468)

In addition to providing an introductory guide to the terrain of the *Nachlass*, I provided a number of examples of the kinds of connections that a digital edition can facilitate, arguing that Wittgenstein’s published works become “more accessible if one approaches them as selections from a larger body of work. Looking at this larger body of work makes it easier to grasp the problems that occupied his attention” (Stern 1996, 446.)

3. Digital Wittgenstein scholarship: the present

The first part of the Bergen edition of the Wittgenstein papers was published in 1998, with the entire edition available in 2000. Even by the relatively slow-moving standards of academic publishing, one might well expect that by 2007 we should be able to assess the impact of this “digital turn” on Wittgenstein scholarship. The available evidence suggests that its

impact has not, so far, been as large as early reviewers hoped — or feared. While many Wittgenstein experts, myself included, regard it an invaluable resource, the vast majority of work on Wittgenstein published since the turn of the millennium makes little or no use of the digital turn. Indeed, as Hrachovec (2005, 365) has pointed out, quite a few of the monographs and collections of papers on Wittgenstein published since the Bergen edition became available, including a pair of German-language readers on the *Tractatus* and *Philosophical Investigations*, do not even list the Bergen edition in their bibliography.

There are, of course, a number of reasons why a substantial fraction of Wittgenstein's interpreters will never make use of the *Bergen Electronic Edition*. Many Anglophone philosophers do not read German, and many of those who do have the command of the language needed to make use of the digital edition are simply not interested in taking on the project of exploring such a voluminous and extensive archive. Indeed, many philosophers consider the *Tractatus* and *Philosophical Investigations* to be Wittgenstein enough, and are reluctant to even avail themselves of the remainder of his published (and translated) works. Such philosophers often draw a sharp distinction between philosophy as argument and philosophy as history of ideas, and consider a philosopher's secondary and preparatory writings as only relevant to the kind of genetic study that they regard as the business of the history of ideas.² But in addition to these very general reasons why many philosophers are unwilling to take even the first step beyond Wittgenstein's early and late masterpieces, there is also a considerable reluctance to make use of this kind of archival material. While that reluctance rarely finds its way into print, it should not be underestimated. In a seminar on Nietzsche, another philosopher with a complex and problematic *Nachlass*, Bernard Williams gave glancing expression to this sentiment:

I have a lot of trouble with the concept of the will to power, particularly in the Heideggerian emphasis: this sort of metaphysical force in the *Nachlass*. I belong to the Anglo-American view that those things are best left where Nietzsche left them, just like a lot of Wittgenstein's *Nachlass* actually. (Williams 1999, 257)

This reluctance to make use of digital archival resources is not a phenomenon restricted to philosophy, although it does seem to be particularly strong among philosophers in the analytic tradition. Sadly, it is precisely this kind

of prejudice that prevents a wider appreciation of the significant results that have been achieved by researchers at the Wittgenstein Archives at the University of Bergen and the Nietzsche Project,³ results which serve to correct the misguided interpretations Williams simultaneously alludes to and promulgates.

Furthermore, there is the additional factor of resistance to digital editions, which are often approached by scholars with considerable caution, if not outright distaste. In a recent piece on “Current issues in making digital editions of medieval texts,” with the provocative subtitle “Do electronic scholarly editions have a future?” Peter Robinson, a distinguished medievalist and editor, observes that “many scholars are not persuaded of the advantages of digital editions” (Robinson 2005, §8). Like Hrachovec, Robinson notes that scholars in his field that he would expect to cite and use definitive digital editions do not always do so. He also provides some useful perspective on the outlook of the principal academic publishers, observing that both Cambridge and Oxford University Press

have stopped publishing scholarly editions in digital form. This is the more remarkable given that, in the first half of the 1990s, both publishers made considerable investments in electronic publication of scholarly editions. OUP was first, with the massive project that eventually published some 20,000 pages of Wittgenstein’s *Nachlaß* in digital facsimile and transcripts. But even before this was published, the press had decided to pull back from digital publication of scholarly editions. ...At one point, around late 1994, we all became rather excited about the prospects for digital editions (then called electronic editions): proposals were flowing in for electronic editions from so many scholars, that CUP even issued a prospectus for a Cambridge Electronic Editions series. The excitement soon faded, however, as CUP discovered what OUP had already learnt: that electronic editions cost no less than print editions to produce and require staff to be educated in the new possibilities. (Robinson 2005, §7)

Even among those enthusiastic about the ultimate value of work on the Wittgenstein papers, there is considerable scepticism about the philosophical results that have been achieved. For instance, in an article on “Wittgen-

stein's *Nachlass*" published in *Philosophical Investigations* in 1998, Beth Savickey claimed that "To date, no manuscript material has significantly altered the reading or interpretation of Wittgenstein's later philosophy" (Savickey 1998, 348, n. 50.) This claim, however, is demonstrably false: we need look no further than the volumes that make up the first edition of the Baker & Hacker commentary (1980, 1980a, 1985, 1990, and 1996; cf. 1984) undeniably one of the most influential contributions to the interpretation of Wittgenstein's philosophy. Their close reading of the sources of the remarks in the *Philosophical Investigations* makes essential use of the *Nachlass*, and has had an enormous impact on subsequent work on that book. It set a new standard for a thorough and systematic reading of the text of Part I of the *Philosophical Investigations* as a whole, and has effectively laid to rest the once widely held view that the *Philosophical Investigations* cannot be read as a single sustained series of arguments.

However, I believe that the various prejudices that stand in the way of making the best use of digital editions are not the principal problems that hold us back from making the best use of the digital turn, not only in Wittgenstein studies, but for scholarly editions in general. Rather, the leading difficulty faced by such editions is that for all the starry-eyed talk of the possibilities opened up by electronic text, and the claims about the deep and fundamental changes accompanying the shift from print to the digital medium, we have failed to appreciate the full practical consequences of the change. In moving to the digital medium, we are not simply working with a different kind of text, as the expressions hypertext, electronic text, and digital edition suggest. Rather, we have moved to a quite different medium: software. In the remainder of this section, I discuss some of the difficulties that arise out of the mismatch between the present needs of scholarly researchers making use of digital editions and the nature of the software industry. In the section that follows, I consider some of the reasons we should still be optimistic about the prospects for the digital edition of the Wittgenstein papers.

Software development is a multi-billion dollar industry, in which humanities software is inevitably marginal, and so required to exist within a context determined by much broader market conditions and developments almost entirely beyond our control; the appropriate comparison is not to the tail wagged by the dog, or even to the fleas on the dog, but to the smaller fleas that live on the bigger fleas. Both the CD-based and web-based versions of the *Bergen Electronic Edition* are, in various ways, highly unsatis-

factory media in which to present the coding and transcription work that is the core achievement of the Bergen project. The distinction between the underlying coding achievements of the Bergen project in producing a machine-readable version of the *Nachlass* on the one hand, and its multiple realization in a variety of different software packages is usually lost on end-users, but is crucial for appreciating why there is much more to the Bergen project than the OUP and Intelix editions that have been released so far.⁴

Hrachovec (2005) has recently published a detailed and revealing discussion of the great technological difficulties involved in keeping the *Bergen Electronic Edition* available to faculty and students at the University of Vienna, as the support staff there moved to a server model that was incompatible with making use of a local CD-ROM copy of that edition. At the University of Iowa, we do own the online Intelix editions of a number of Wittgenstein databases, but I have so far told our library staff that we should not buy the online version of the *Bergen Electronic Edition* because it only provides access to transcriptions of the *Nachlass*, and does not include online access to the facsimiles of the corresponding manuscripts that are part of the OUP CD-based edition. Until now, this has been impossible, because of the bandwidth that would have been needed to facilitate access to those images, but I understand an upgrade will soon be available to the online Intelix edition that will make facsimiles easily available.

A few years ago, I corresponded with a researcher who was belittled at his PhD defense for what an examiner claimed was a serious mistake in his quotations from Wittgenstein – because he had relied on my published edition of that text, rather than the supposedly authoritative transcription online. After re-checking my transcription against the facsimile, it was clear to me that this was due to a mistake in the *Bergen Electronic Edition*, a fact that was later confirmed by the Bergen editors, who have since duly noted the correction to their transcription in their online list of corrections.⁵ In my work for a review of the *Bergen Electronic Edition* (forthcoming in the *European Journal of Philosophy*), I asked my research assistant, Tuomas Manninen, to carefully check a number of selected passages from the *Nachlass* against the Bergen transcription. While we were impressed by the overall quality of the work, we did find errors on most of the pages we reviewed.

At first, I was simply able to install our departmental copy of the OUP CD of the *Bergen Electronic Edition* on a shared computer, where it was easily available to students and faculty. However, not so long afterwards,

our university initiated new security policies that required locking down public computers to prevent unauthorized software installation, and so I had to train our support staff to install and reinstall it on a regular basis. Unlike most recent commercial and educational software, installing the OUP version of the *Bergen Electronic Edition*, software designed for installation under Windows 3.1 or Windows 95, is a relatively long and complicated procedure. Five CDs, containing the images of facsimiles of approximately 20,000 pages of manuscripts and typescripts, must be copied over to a directory that satisfies the archaic convention that its name, and the name of any directory in its path, is no longer than 8 characters: it cannot be placed in a location such as “My Documents”. The image viewer provided with the program no longer works in Windows XP; while it can easily be replaced by whatever contemporary image viewing program one would like to use, this requires that the person doing the installation knows how to edit the file that provides the necessary information to the program. When I tried to install the *Bergen Electronic Edition* on the state-of-the-art rental computer I used to attend the 2007 Wittgenstein Symposium, I repeatedly received error messages telling me that the path was inaccessible. Late on a Friday afternoon, I called up the support staff at our rental program, who had no idea why this was so, but were ready to rush me a fresh machine if that would fix the problem. After half an hour’s frantic web searching, I learned that recent models of the make of computer in question no longer support the installation of Windows 95 era software, but that with some judicious uninstalling of the software in the operating system that produced the conflict, a workaround would be possible. While these are relatively minor technical challenges for someone used to this kind of work, the skills need to run the OUP CD-ROM, like any software designed to run on the operating systems of the early 1990s, are rather like those needed to run a car from the middle of the last century. One always has to be ready to get out the toolkit and tinker with the machinery, in situations where most of today’s drivers, or software users, would either call for technical support, or simply give up altogether. More generally, today’s users expect the ease of a Google search, and the ability to transfer text files, without any loss of data, into a Word-compatible document. While Folio Views provides an unusually powerful search engine, it takes some work to become familiar with its conventions, and while an arcane system of “shadow files” in the CD edition does enable one to edit and copy text without the extensive copy-protection restrictions built into the online version, casual users are unlikely to master

the procedures involved. While perfectly functional for the serious researcher willing to become familiar with the software's design, these capacities are as inaccessible to most of today's students as anything else from the far-off era of Windows 3.1.⁶

4. Digital Wittgenstein scholarship: the future

However, as Chou En-Lai is supposed to have said in response to a questioner who asked him to assess the impact of the French Revolution, it is too soon to tell the extent to which the availability of digital transcriptions and images of the Wittgenstein papers will alter the reading or interpretation of Wittgenstein's philosophy. Hallett (1977) was the only book based on extensive use of the microfilm of the Wittgenstein papers to be published during the 1970s. Indeed, apart from the volumes co-authored by Baker and Hacker, it was not until the second half of the 1980s, over fifteen years after the production of the microfilm, that a number of books based on extensive *Nachlass* research were published. If we take into account the fact that it took two decades for a significant body of scholarly literature on the Wittgenstein *Nachlass* to emerge, and consider that the *Bergen Electronic Edition* was only published in 2000, it is surely much too soon to judge the nature of the impact of that edition on Wittgenstein scholarship. Like all major revolutions, the greatest impact of the digital turn will probably be on those who arrive on the scene afterwards and take its achievements for granted, rather than on those who witness its arrival.

Furthermore, as we have seen, the Bergen "edition" is not a book, but a piece of software, and must be evaluated in those terms. We frequently overestimate the short-term effects of technological changes while underestimating their longer-term impact. The version of the Folio Views software package employed by the *Bergen Electronic Edition* was developed in the first half of the 1990s, when Windows 3.1 was the standard operating system and only computer experts knew how to use a web browser. Because the customer base is so small, it is sold at a price that only well-endowed institutions can afford.⁷ Nor has it been upgraded, although it has been repackaged as a web-based software package for university libraries, and plans are now underway for a new version that would make use of current software standards. In other words, the market for such technology has, so

far, guaranteed it a “niche” role where it is only accessible to relatively few researchers.

However, as the results of the work of the first generation of users of this software reaches a broader audience, and as the software becomes both easier to use, and more widely disseminated via initiatives such as the *Discovery* project, which will make some 5000 pages of the *Nachlass* freely available on the Web, we can expect that the digital turn in Wittgenstein studies, like the web browser in the 1990s, will eventually reach a wider audience.⁸ Another promising development is the publication of the Innsbruck electronic edition of Wittgenstein’s correspondence (Wittgenstein 2004), which includes hyperlinks to a substantial and informative commentary, biographical information about people, places and literature mentioned in the letters, and a timeline of Wittgenstein’s activities.

5. Conclusion

While relatively few books and articles have been published to date that make extensive use of the digital edition of the Wittgenstein papers, digital research on Wittgenstein has flourished in recent years. Crucially, the Bergen Archives have not only developed and disseminated a variety of digital editions of Wittgenstein’s papers, but have also provided research facilities and fellowships, and pursued a variety of collaborative enterprises with other organizations, that have enabled a steady stream of researchers to visit the archive and create an informal international network of Wittgenstein *Nachlass* researchers. As one observer has put it, there is “a vibrant research community dedicated to the exposition and criticism of Wittgenstein’s work, including the vast *Nachlass*” (Martin 2008, p. 1). For instance, between January 2002 and August 2004, 32 research projects, involving over a thousand days of on-site research, were carried out at the Bergen Wittgenstein Archives, addressing issues in Wittgenstein studies, philosophy, scholarly electronic publishing and text encoding.⁹ There has been a great deal of work on the *Nachlass* materials, much of it not yet published, or only available in the form of theses and dissertations.

Furthermore, the editorial work on Wittgenstein’s manuscripts and typescripts, and the composition studies that this work has made possible, have led to new ways of reading Wittgenstein. In the 1990s, it seemed likely that the digital edition of the *Nachlass* would lead to a new focus on the

details of the revision of Wittgenstein's remarks from first drafts to final formulation, and the comparison of his use of key terms at different stages of the development of his thought, as it was clear that computer searching would make this kind of research far easier. However, the first, pre-digital generation of *Nachlass* scholars had already done a great deal to illuminate connections and continuities between the *Nachlass* and the finished work. Indeed, this research had, for the most part, led to readings of the positions Wittgenstein sets out in the preparatory work as early formulations of the leading ideas of the *Philosophical Investigations*. Consequently, while recent research has certainly made use of the opportunities provided by digital search, such editorial and philological questions have not, for the most part, been at the centre of attention. Instead, the principal contribution of the digital edition, in terms of new approaches to understanding Wittgenstein, is the way it has made his work as a whole much more accessible, now that it is no more difficult to read his manuscripts and marginalia than the published works. Now that the entire Wittgenstein *Nachlass* can be easily surveyed by anyone with access to the digital edition, the pitfalls of the pre-digital strategy of casting light on the published work by looking back at the earliest sources and the history of their revision have become apparent. If one focuses on those source texts in isolation, it is only too easy to construe Wittgenstein's manuscripts as a record of the gradual emergence of his final considered views, and to take the early formulations of remarks in the *Tractatus* and *Philosophical Investigations*, passages that are often longer and more detailed than the final, published version, as a reliable guide to what their author really meant when he made use of those words many years later. On the other hand, digitally informed research on Wittgenstein has made possible a broader perspective on the development of his work as a whole, and has facilitated an appreciation of the great distance that often separates the forceful statement of philosophical theses in Wittgenstein's manuscripts from the 1930s and the nuanced placement of those words within a larger dialogical framework in the *Philosophical Investigations*. Thus, while the first, pre-digital, stage of research on the *Nachlass* in the 1980s and 1990s tended to interpret the *Tractatus* and *Philosophical Investigations* as restating and further articulating positions that Wittgenstein had arrived at in the source manuscripts, recent work on the *Nachlass* has led to a new appreciation of the distinctive style and character of Wittgenstein's masterpieces.¹⁰

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Notes

1. For further information, see Hintikka 1991 and Stern 1996.
2. See Stern 2004, p. 59 ff. for further discussion of immanent and genetic approaches to Wittgenstein's writing.
3. See <http://www.hypernietzsche.org/>.
4. For a detailed discussion of this topic, see Part II of Pichler 2002.
5. See <http://wab.aksis.uib.no/bee-errors.htm>.
6. The CD edition runs on Folio Views 3.x; the software's publisher has recently stopped supporting Folio Views 4.x.
7. As of spring 2007, over 250 copies were sold (Wittgenstein Archives Bergen, oral communication).
8. Further information on these developments is available at http://wab.aksis.uib.no/wab_discovery.page and <http://www.discovery-project.eu/>. For an example of the various formats in which it will be possible to display the text, including an "interactive edition" of a sample Wittgenstein manuscript (MS 139a) and typescript (TS 212) that allows the reader to choose between a wide variety of editorial options, see http://wab.aksis.uib.no/wab_hw.page/ and <http://wab.aksis.uib.no/transform/wab.php?modus=opsjoner>. Those interested in the challenges and prospects involved in migrating the machine-readable version of the Wittgenstein Nachlass from the customized coding that was developed in the early 1990s to the current XML-TEI standard will also want to learn about a pilot project, to be found at http://wab.aksis.uib.no/wab_sept1914.page. For further discussion of related issues, see Hrachovec 2000 and 2005, McEwen 2005, Pichler 2002, 2005 and 2006.
9. For details, see http://wab.aksis.uib.no/wab_eu-ari-wab.page.
10. For further discussion, see Schulte 2002, Pichler 2004, and Stern 2004.

Section 3:

Philosophy of Information

As We May Be Doing Philosophy: Informationalism – A New Regime for Philosophy?

DANIEL APOLLON, BERGEN

Introduction

When Vannevar Bush published his visionary paper “As we may think” in 1945, he outlined an ambitious futuristic vision of information and communication technologies (ICT) which would serve the purpose of amplifying the intellectual capacity of mankind by means of a highly interconnected network called *memex*. Now, in 2007, the hypertextuality of the Web and the new emerging “semantic tools” (e.g., computational ontologies, see Smith, 2003) offer philosophers such practical tools and engineering visions of shared knowledge construction. And, as humanity moves from the Gutenberg age into a globalised networked information culture, philosophers may increasingly exploit or reject these new opportunities. More than offering one more tool, the contemporary pervasive spread of global, networked information technologies and cultures reactuates the issue of the specificity of philosophy in culture and society. This paper is a three-parts construction. In the first section, I will discuss various historical developments which may shed light on the notion of “regime of expression”, focusing on the evolution of textual regimes, the limits of residual orality, the role of specialised languages and controlled vocabularies in the “de-oralisation” of discourse, and possibly emerging post-oral regimes. The main function of the second section is to illustrate, with particular reference to Gilles Deleuze’s work, various comprehensions of philosophy as conceptual engineering. The two first sections prepare the ground for a critical coverage in the third and last section on *informationalism* as engineerable metaphysics and on computational ontologies as the ultimate engineer tool.

1 Regimes of expression

Textual regimes of expression

In the course of history, philosophy, seen as an activity, has exploited the inherent potential of oral rhetoric and written human linguistic expression with increased specialisation. In addition, philosophers have included abstract graphical notation, diverse diagrammatic representations, and more rarely, figurative pictorial material as an integral part of their discourse. But, as Biggs (2004a, p. 3; see also 2004b) has noted, when dealing with Wittgenstein's manuscripts, "the literature about 'what is a text' [...] is more extensive than the literature on 'what is a graphic'".

Plato's strong criticism of writing as constituting the best "technology of the mind" (Phaedrus, 274c-275b) has been extensively commented (Auroux, 1994), but rarely followed by later philosophers. We may suspect that even Plato himself did not confine himself to some primitive oral method untouched by literacy (e.g., while defending the ideal of a dialogical exchange with Menon on mathematics, Plato draws figures in the sand, *op. cit.*, p. 26). As a matter of fact, those very thinkers who have been exalting the virtues of face-to-face directness, of dialogical encounter, have also been prolific producers and refiners of text-based discourse. Moreover, as noted by Ong (Ong, 2002), "Plato's entire epistemology was unwittingly a programmed rejection of the old oral, mobile, warm, personally interactive lifeworld of oral culture (represented by the poets, whom he would not allow into his Republic). The Platonic ideas are voiceless, immobile, devoid of all warmth, not interactive but isolated, not part of the human lifeworld at all but utterly above and beyond it." (*op. cit.*, p. 82). So, Plato's criticism of writing and discourse in praise of a dialogical method did not mean that he embraced the ideals of an already receding pure oral culture. His didactic cross-questioning (*elenchos*) may have more roots in widely used political audit techniques of politicians and administrators after their term of office had expired (the *euthyna* procedure) than in some mythical primeval orality. Its primary purpose is clarification of unhealthy thought (Clay, 2000, p. 180 cited in Gabor, 2002, p.12). *Dialectic* is defended as the most refined philosophical method to search for the truth in opposition to the controversial *eristic* method of the Sophists. None of these oral, face-to-face methods defended or criticised by Plato refer to a natural conversational situation but

to academic or administrative techniques rooted in some well-entrenched institutional practice.

Indeed, during the long history of Western and Early Arabic philosophy, an evolution took place encouraging the development and dissemination of increasingly specialised terminologies and argumentative techniques. Many of these techniques were common in oral situations (lectures, disputes, recitation) and in writing. Gradually, pure textual discourse forms emerged. As an outcome of this process, the rule of textual regimes of expression became firmly consolidated reflecting a process, which took many centuries. In spite of this evolution, the textualisation of the philosophical discourse has not resulted in a plain rejection of face-to-face audible spoken communication (speech) but rather in a more subtle cultural relegation of orality to a minor role. While speech has been acknowledged as “natural language” and as the substrate of any written discourse, it has, if not always in theory, at least in practice been weighed and found inadequate as the primary means of “doing philosophy”. Speech in contrast with oral techniques, as illustrated by the Platonic methods briefly described above, is under the rule of textual regimes, at most, useful for preparing, commenting, or refining a written discourse already enriched with textual knowledge.

Toward post-oral regimes

Walter Ong’s (Ong, 2002) distinction between “primary” and “residual orality” may shed some light on the complex contact-area between diverse stages of orality and textual literacy. Primary orality, in Ong’s perspective, refers to and expresses knowledge “totally untouched by any knowledge of writing or print” (op.cit. p.12) and may, following Leroi-Gouran (1965), maintain deep ties with gestuality. Residual orality presupposes an exposure to writing or print and involves rather complex mixtures of spoken and written verballity. With reference to Ong’s notion of orality, the growth of the textual regimes in philosophy may be interpreted as reflecting the late evolution of residual orality dynamics and possibly exhibiting the first signs of a post-oral period. Further research may study the presence vs. disappearance of distinctive characteristics of primary orality as a possible indicator of this evolution. One may also assess the degree of de-oralisation of philosophical discourse using the basic characteristics of primary orality formulated by Ong (op. cit., pp 34-54.): (a) the disappearance of formulaic

styling replaced in modern philosophy by procedural devices, (b) the replacement of aggregative expressiveness by subordination mechanisms (e.g. systems of hierarchical dependency), (c) the replacement of mnemonic and ritual redundancy by stylistic parsimony, (d) the replacement of polemic, agonistic contrastive discourse, and of categories of empathy by various distancing techniques, and finally, (e) the replacement of situational descriptions and points of view by abstract descriptions.

However, Ong's and Goody's approaches (see Goody, 1968, 1986 and 1987) have addressed primarily the relationship between orality and literacy. As one can expect, they have not dealt with the recent and challenging theme of a possible severing of ties between oral regimes and specialised languages. Early philosophical texts depend heavily on oral rhetoric and conversational dynamics. The written discourse of theologians, lawyers and philosophers has since Antiquity steadily evolved. This gradual change has led from an early formative period, during which texts and transcripts still exhibited a high degree of residual orality, to a late period, during which increasingly specialised languages have added various degrees of embedded argumentational complexity unavailable in plain speech. This late stage may prepare the ground for a post-oral period. The evidence for such a change resides not as much in complexity itself, spoken or written language actually being inherently complex, but in the replacement of one kind of complexity inherited and cultivated through residual orality by another kind of planned, controlled, engineered complexity creating a *de facto* need for repetitive or automatic treatment.

The concept of "philosophical text" (and also more generally "text") may already hide various degrees of embedded complexity and multiple structures that may challenge even advanced digital transcription techniques (see Huitfeldt, 1992). Critical editors and interpreters have been forced to revise the status of "what is the text" (deRose 2002), as it is the case with the transcription of Wittgenstein's *Nachlass* by Pichler, who acknowledges that his "aim in transcription is not to represent as correctly as possible the originals, but rather to prepare from the original text another text so as to serve as accurately as possible certain interests in the text" (Pichler 1995: p. 691).

So eventually, philosophical texts may discard early conceptions of what constitutes a text and evolve towards a situation where residual orality wanes away, being replaced by argumentative devices with no apparent antecedents in neither primary nor residual orality. These emerging and

future argumentative devices in philosophy may, in my view, reflect and exploit various computing automatisms, with no root in oral practice. Referring to Margaret Mead's generational model (Mead 1970), one may imagine that philosophical regimes may evolve from a post-figurative to a co-figurative stage. While in post-figurative regimes philosophical discourse depends heavily on established oral regimes, in co-figurative post-oral regimes philosophers may look for contemporary models in formal languages, automatism and various network ideals. A post-oral philosophical regime may indeed, involve a radical departure from more than the preliterate heritage. It may depart more profoundly from logocentrism, characterised by Derrida as "the metaphysics of phonetic writing" (Derrida, 1967, p.11) towards a regime of "scriptural symbolism" (a term, which according to Ortigues, 1962, p. 62 cited in op. cit., p. 13 exploits "abuses of vocabulary" e.g. in mathematical "language", which is not a language, but *stricto sensu*, a "characteristic" in the authors' view). It may explore new territories of discourse, which may be expressed, not any more by what we nowadays still perceive as textual expression, but by means of systems exploiting old and new kinds of scriptural symbolisms and processes. I call these "automatised artefacts", referring not only to the computational means available, but also to new cultural, mental competences, which may be necessary to acquire.

Specialisation and processing in the discourse

The departure from oral naturalness towards domain-specialisation can be identified by three evolutionary characteristics: firstly, the introduction and increasingly systematic use of *restricted terminologies* (specialised lexica without standardised processing) and rethorical figures; secondly, the additional *formal notational systems*; and thirdly, the emergence and application of *formal procedures*, which may be argumentative, purely logical or algorithmic.

The first departure from conversational naturalness through the introduction and systematic use of these characteristics can be observed already in the fragments of the Presocratic philosophers that have survived through time. Restricted terminologies appear, in my view, to be consubstantial with philosophy. Even those thinkers, who have deployed considerable efforts to remain "simple" and avoided formal notation, have, even so, ended exploit-

ing some restricted terminology with engineering precision, as it is the case, e.g., in Martin Buber's deceptively simple text "I and thou" (Buber, 1923).

While using a specialised lexicon is not limited to philosophy, but indeed, reflects various life situations, it is the planned processing of a restricted terminology that brings philosophy together with a large portion of the scientific discourse in a category of its own. Adding formal notational systems to specialised language does not only call for some new kind of "thinking", but also for various degrees of standardised processing based on scriptural symbolism, e.g., in the age of computers, various algorithms. Classical logical notation is only one among several possible instances of *scriptural symbolism*. It is important to note that this evolution has taken place considerably long time before the introduction of computers and of early notions of "computing". This justifies in our view the use of the general term "scriptural symbolism".

However, specialised languages may be viewed as forerunners of *controlled languages* (vocabulary and syntax), tailored with the sole purpose to make some specific processing possible. Such controlled languages may rely heavily on diverse kinds of scriptural symbolism, e.g. mark-up languages, algorithmic agents etc. and instaure new regimes of expression, taking over the discourse and emptying what is left of the "text" of the last remnants of residual orality.

The move from primary orality to residual orality under diverse textual regimes, and the evolution from textual regimes reproducing oral communication, to textual regimes mixing orality and scriptural symbolism, constitutes in my view the prehistory of the emerging regime of informationalism. As a consequence, the challenge, which information technologies pose to philosophers, is not limited to the emergence of "new regimes of expressions" or "old discourses in new cloak". Rather, the challenge resides in the dissemination and adoption of the *paradigm of informationalism*, a term I adopt loosely from Castells (Castells, 2004). The real challenge resides in what I, for the sake of brevity, will, refer to and discuss further in this paper as "informationalism" or, more elaborately as *informational substantialism*.

2 Philosophy as conceptual engineering

Engineering concepts

“Doing philosophy” involves some amount of craft or *engineering* as an integral part of the philosopher’s activity in general, and of the philosopher’s discourse in particular. I understand “engineering” as an activity that takes place irrespectively of which particular kind of work, school, or product the philosopher may lean towards. As a result, the notion of conceptual engineering applies, in our view, as much to philosophical discourse as to everyday speech. It covers as much the discourse found in “popular philosophy”, “existential” discourse (e.g. the theatre plays of J.-P. Sartre), as distinctively technical philosophies (e.g., analytical philosophies, the *Principia Mathematica*, ...). Conceptual engineering in philosophy takes place irrespectively of the philosopher’s language and style and of the philosopher’s particular view on language.

The notion of “conceptual engineering” presupposes some various degrees of premeditated design. Actually the degree of awareness a philosopher may or may not possess with regards to design seems to be less decisive. One may just state that it is sufficient that some conceptual system or design is detectable in the work of the philosopher in order to justify the use of the term “engineering”. It also presupposes a reduced set of linguistic and non-linguistic “tools”, which may be used to collect, assemble, and deploy conceptual constructs. Between the “thinking” of the philosopher and the “work”, I assume however the presence of artefacts, which not only enable the production of the work, but impose to some extent a “regime of expression” on the thinker.

Simon Blackburn defines his activity as a philosopher in simple, perhaps, too simple, but, though quite illustrative terms. “I would prefer to introduce myself as doing conceptual engineering. For just as an engineer studies the structure of material things, so the philosopher studies the structure of thought. Understanding the structure involves seeing how parts function and how they interconnect. It means knowing what would happen for better or worse if changes were made. This is what we aim at when we investigate the structures that shape our view of the world. Our concepts or ideas form the mental housing in which we live. We may end up proud of the structures we have built. Or we may believe that they need dismantling

and starting afresh. But first, we have to know what they are.” (Blackburn, 1999). For Blackburn, defining himself as a conceptual engineer involves understanding how concepts “are”, by studying how they “interconnect” and “function”. Blackburn’s definition presents a rather mechanistic view of the nature of conceptual items and of their assembly. Indeed, Blackburn’s engineering approach may be viewed, if taken literally, as being not *that* remote from understanding how to repair a car engine or computer.

Gilles Deleuze, himself son of an engineer, viewed philosophy not only as *partly* engineered (one may read Blackburn’s view of conceptual engineering as being solely a means towards an end) but as *actually* being engineering (Welchman, p. 213; Deleuze, 1968) and little else if anything else. This consistent engineering view is further developed and emphasised repeatedly by Deleuze and his co-author Félix Guattari in the first chapter of their late work “Qu’est ce que la philosophie?” (1991). Deleuze does not want philosophy to remain a reverential conservation of antiques. Nor does he want “conceptual engineering” to be limited to modernise old potiches, read inherited canonical themes. In Deleuze’s view, philosophy is a construction site, and the construction that takes place there is a nonsequential process involving assembly, disassembly, reassembly, and, unavoidably, production of junk material.

There are no static concepts

It may now be evident that Blackburn and Deleuze agree only superficially on what conceptual engineering may look like. Blackburn emphasises controllability, validation and reliability. Deleuze and Guattari on the contrary endeavour to oppose what they experience as a contemporary decay and fossilisation of the notion of “concept” by emphasising the creative, open-ended nomadic invention of concepts as “event”, “happenings” assembled from heterogeneous elements. Understandably, such concepts that are to be engineered, crafted or designed by philosophers, are neither old vases left in the window in need of periodical restoration, nor empty seats left by their occupants. Thus, concepts are neither unearthed from a philosophical underground, nor borrowed *as is*, nor re-used, as parts taken from an old engine in order to produce a slightly more refined remake. For Deleuze, philosophy is about “inventing [such] concepts” with equal importance given to “inventing” and “concept”. While smart disassembly, and reassembly of parts may be part of the activity, it does not become philosophy

before invention takes place. Deleuze and Guattari's insistence on concepts as an event of life relies heavily on Michel Foucault's bio-philosophy, as witnessed by the authors' programmatic quotation of the inventor of the concept of biopower: "To shape concepts is a way of living and not of killing life. It is a way of living in relative mobility and it is not an attempt to immobilise life." (Foucault, 1994, pp. 774f). For Deleuze "[the] philosophical concept is related to the cry. It is very much alive, it is a way of life" (Deleuze's lecture, 1980; my translation)¹. Hence, the Deleuzian concept ceases to be a tangible, monolithic, static construction. It carries along the two characteristics of multiplicity and heterogeneity. The philosopher exploits the narrative power of the discourse, which is condensed into concepts. A concept possesses a local density, expressing some kind of singularity *hic et nunc*.

Two Deleuzian terms express the situational and fluid nature of concepts. The first is the term *haecceity*², which expresses the situated coherence of the concept. This coherence remains tied to the conjunctural, confluent, hybrid, and transient nature of concepts. The second term is the Greek notion of *tynkhanon*, a term used by the Stoics with the meaning "that which happens" (Theureau, 1999). Contrary to the contemporary notion of "news" or "novelty", *tynkhanon* carries no sense of irruption, of never seen, nor never-pre-existing. The *tynkhanon* does not refer to some hidden truth revealed by some tricks of lexical magic. It connotes, rather, a notion of confluence, conjunction. It is more related to mathematical notions met in nonlinear dynamical systems (Golub & Baker, 1996; Thom, 1972) and chaos theory, or in Polanyi's notion of emergence (sudden focusing from marginal clues), than to some lexical adequacy (see Polanyi, 1962, 1967). In Deleuzian terms, a philosophical concept "takes place", "happens". The Deleuzian translation of *tynkhanon* may therefore be "conjunctural events" or "singularity in a situation".

Additionally, concepts are not only characterised by their potential to "singularise", to condense, to focus, or to situate. Concepts are also producers of difference and repetitions, related to what Deleuze calls objectiles, morphological variations of a single theme (e.g. sand-dunes in the desert, counterpoint patterns in Bach's music, digital pattern variations, etc.), conveying both self-identity and multiplicity, as well as rhythm in time, space and thought (Deleuze, 1988).

Eradicating hierarchical binarism

Blackburn and Deleuze may both prosper with playing with a conceptual Lego-set. While Blackburn would be concerned with coherence, functionality and verifiability of the construction, Deleuze and Guattari may favour more the production of desire while tinkering with the building blocks, than by contemplating the full assemblage.

For, contrary to a rocket engineer or computer designer, we cannot know what a philosopher can do: “The philosopher becomes a hunter-gatherer, an original sinner, a fire machine, a mind-fucker, a metamorphic resonance, a population all to himself, and whose invention of concepts does not lead to the construction of an architectonic model or monument but cultivates an ambulant population of relayers, a positive feedback system that connect and convolute things in ways that defy established orders and critically interrogates and challenges existing disciplines of thought-control” (Ansell-Pearson, 1997, p. 14). This is quite far away from engineering as understood by the NASA. The Deleuzian approach to conceptual engineering in philosophy appears to be seriously challenging traditional and static notions of concepts as lexical tags. Deleuze and Guattari eject models for thought, knowledge and experience based on single-rooted hierarchical conceptual constructions, best illustrated by the layout of Linnaean taxonomies (Linnaeus, 1735) and phylogenetic trees. Conceptual creation needs to leave binarism, since the “pivotal taproot provides no better understanding than the dichotomous roots. [...] Binary logic and biunivocal relationships still dominate psychonanalysis [...], linguistics, structuralism and even information science.” (1980, p. 6 in Massumi’s translation). The concept engineer needs to explore *radicle-systems* or *rhizomes*. With reference to James Joyce’s “multiple roots” and Nietzsche’s aphorisms, the authors want to shatter “the linear unity of knowledge”, stating that “this time, the principal root has aborted, or its tip has been destroyed: an immediate, indefinite multiplicity of secondary roots grafts unto it and undergoes aflourishing development” (ibid). Replacing “root-cosmos” by “radicle-chaosmos” (op.cit. p.7), Deleuze and Guattari provide radical, or to take after their terminology, “radicle-like” critical perspectives on recent semantic visions to be realised by means of computational ontologies, which fuel the Semantic Web vision (cp. criticism of Berners-Lee, 2001 by Veltman; Ranganathan and Dahlberg 1931).

Already in 1990, well before the emergence of the Internet, and of the more recent Semantic Web vision, Deleuze warned against two powerful contemporary illusions, the first being the pseudo-creative ideology sold by marketing experts and product designers (French *concepteurs* developing and selling “concepts”), and the second being the claim of some “friends of the concept” to be able to “put the concept in a computer” (Deleuze, 1990). Deleuze may thus be considered as a powerful critic of various brands of conceptual and informational substantialism and a reviver of the still only partially understood Nietzschean idea of concept creation.

Two kinds of conceptual engineering

Engineering is thought to deal with design of machines and physical constructions. Information technologies and automata theory have propelled us into the realm of engineering non-physical virtual systems such as computer programmes, Web Sites or “knowledge bases”. Increasingly, the notion of “machine” or “mechanisms” is not to be taken in the strict sense of “physical mechanical devices”, but more generally, as “machine-like arrangements”. These arrangements (a rather poor translation of Deleuze’s use of the term *agencement*) of physical, social and mental nature express the more general, less obvious notion of *machinic thinking*, which pervades Deleuze’s and Guattari’s work. The machinic domain of the “societies of control” as described by Deleuze in his book on Michel Foucault (Deleuze, 1986), is a society where power is “exercised through machines that directly organize the brains (in communication systems, information networks etc.) [...] toward a state of autonomous alienation from the sense of life and the desire for creativity” (Hardt & Negri, 2000, p. 23). So, to paraphrase the last quotation, the ambition of conceptual engineering in philosophy, or more generally information modelling, is not to produce systems autonomously alienated from the life-context which produced them, but to become and remain a function of life. Following Deleuze, I propose a gradual distinction between two kinds of engineering visions in philosophical activity, and, more generally in concept modelling: the first being a Deleuzian desire-driven crafting of concepts, the second being automated and alienating machinic engineering. Conceptual engineering is, following Foucault, Deleuze and Guattari, not what Aristotle referred to as *techne*, physical and mental arrangements and activities, whose purpose is “to create what nature is unable to accomplish” and “interposes between nature and

humanity a kind of creative mediation”(Guattari, 1991, p. 1; my translation).

Daniel Dennett (1995, p.3 cit. by Welchman, op. cit. p. 222) assumes that some *unconscious engineering* takes place in all human activity, also in that particular kind of activities named “philosophy”. So “engineering” does not need to be premeditated. It just needs to be at work as a system of production. Meanwhile, engineering implies, following Dennett, some notion of a design space. Translated loosely to Deleuze’s terminology, unconscious engineering may express some *agencement* (*agency*). The interesting thing about machinic agency is that it possesses some code that may spill over from one implementation to another (this is one aspect of the Deleuzian deterritorialisation). The design *in se* can acquire productive autonomy.

3 Informationalism: the substitution of “this” by means of data

Posthumanism in the making

Manuel Castells offers a pragmatic, utilitarian, and rather harmless definition of *informationalism* as “a technological paradigm based on the augmentation of the human capacity of information processing and communication made possible by the revolutions in microelectronics, software, and genetic engineering [...] It is the technological paradigm that constitutes the material basis of early 21st century societies” (Castells, 2004). The initial impression of innocuous technological evolution, however, disappears rapidly when Castells emphasises the revolutionary, generalising nature of ICT and the rapid growth of information society. It constitutes a simultaneous recapitulation and take-over of “previous historical developments of information and communication technologies (such as speech, printing, the telegraph or the non-digital telephone). It tends inherently toward universality, ubiquity and geneality. It possesses three basic properties, which explain its multidimensional expanding potential: the first being its “self-expanding processing and communicating capacity in terms of volume, complexity, and speed”, the second being its “recombining ability on the basis of digitization and recurrent communication”, and the third being its “distributing flexibility through interactive, digitized networking”(ibid).

Keeping Castells's definition and the previous discussion in mind, one may attempt to refine the definition of informationalism by distinguishing between four possible versions of the paradigm:

The first covers the most basic definition of Castells and may be labelled *practical and utilitarian informationalism*. However, it derives its power from alleged intrinsic properties, some kind of embodied networking rhizomatic power animating ICTs.

The second version may be labelled *totalitarian informationalism* and is directly related to Michel Foucault's notion of bio-technological power (or: biopower). It involves not only computer networking and traditional media (e.g., ear-tapping, video surveillance), but extends its domain to social engineering and mental engineering.

The third, most challenging version, implied in Castell's discussion, but treated mostly from a very general ethical perspective, may be labelled *posthuman informationalism*. The term refers to various visions, belief-systems, political, and scientific agendas which converge toward possible modifications of "being human" by humans. Posthuman informationalism covers the informational interpretation of biogenetic engineering as 'transcription machinery'. It addresses also the notion of extending *humanhood* to open-ended becoming-versions of *posthumanhood*. It refers to diverse cyborg utopias, as well as exploitation of the notion of virtuality to explore extensions or replacements in order to transgress the biologically inherited constraints of earth-bound body experience. It reactualizes notions of extension of the "I" to virtual spheres and various exosomatic utopias. It offers a new kind of metaphysical programme, where humans are put in charge of the engineering of a postphysical human. It revives themes from literature and cinema, and expresses the constant concern and desire of Western culture for human automata, a theme covered extensively by Deleuze's works on cinema (Deleuze, 1983 and 1985).

One may argue that informationalism constitutes both a paradigm in the Kuhnian sense (Kuhn, 1970), and a *discourse* and *episteme* as understood by Foucault (1966). It is also agitating the spectre of totalitarian regimes integrating *inter alia*:

- A post-mechanic industrial logic (e.g., anything can be produced given the mastery of an informational description of objects, so "cars" are not any longer cars, but physical instances of an informational design);

- A socio-political discourse tending to reframe “social structure” in terms of “information structure” (see Beck, Giddens & Lasch, 1994);
- New cognitive and mental strategies applied by individuals to themselves (following Foucault’s notion of biopower).

Engineerable metaphysics

Informationalism relies on a vision of reality, which combines in a novel way a basic world-view with a powerful production principle. Hence, the term *engineerable metaphysics* may suitably describe this vision. Engineerable metaphysics presupposes a *discourse* and an *episteme* telling where the reality of objects in the world may reside. It may be formulated as a semi-philosophical, semi-technical programme, building on a few but powerful assertions (I use capital letters in the following to distinguish some concepts underlying engineerable metaphysics from their normal usage):

1. The World is populated with Objects.
2. Concrete Objects in the World possess phenomenal and *evident* surface information, which may be immediately accessible to senses or to sensory devices. The surface information may be of a general kind (e.g. my car may have wheels) or of a real kind (e.g. my car has worn tyres).
3. Abstract Objects in the World also possess, house, contain hidden Latent Information, not immediately accessible to senses or to sensory devices.
4. Concrete Objects may contain Abstract Objects.
5. Purely Abstract Objects do not possess evident phenomenal information. Such objects only contain Latent Information.
6. Concepts are the mappings of such Abstract Objects to themselves, or of Abstract Objects to Concrete Objects.
7. Information Structures constitute not only descriptors of latent information but may serve also as genitors of Real Concrete Objects in the World (e.g., the abstract description of “cars” may be used to actually produce the cars which I will drive next week) .

8. Objects become interesting when an Information Structure may be mapped onto them.
9. Whatever possesses a revealed Latent Information and is mapped as a processable Information Structure qualifies this “whatever” as an Object.
10. Such Objects, real, concrete or abstract may be Things, Persons, Relation, Characteristics or Events.
11. The *raison d’être* of Objects in this World is to yield Information Structures.
12. When the Information Structure can be revealed by some mapping, the Object may be, for all practical purposes, replaced by its Information Structure. This is the *substitution argument*.
13. Reality tends to reside more in the Information Structure than in the Object.
14. Data is what makes Information Structures mappable and processable.
15. Natural Language (natural speech) tends to be inadequate to describe such Objects.

Conclusion

Computational ontologies (Smith, 2003) offer the promise to implement a part of the programme outlined above. A representative definition may be found in Smith (op. cit., p. 155) which defines a computational ontology as an attempt to “provide a definitive and exhaustive classification of entities in all spheres of being. The classification should be definitive in the sense that it can serve as an answer to such questions as: What classes of entities are needed for a complete description and explanation of all the goings-on in the universe? Or: What classes of entities are needed to give an account of what makes true all truths? It should be exhaustive in the sense that all types of entities should be included in the classification, including also the types of relations by which entities are *tied* together to form larger wholes.”

If one adds *processing power*, e.g. by means of computer algorithm, on top of the *descriptive power* of such computational ontologies, whose ambition is to describe the characteristics of objects in the world and of their *ties*, one moves disturbingly close to *engineering* the metaphysical programme outlined above. Recent “transgressive” approaches to cell genetics, as illustrated by biophysicist Albert Libchaber’s effort to study and reproduce protein self-assembly as computation and molecular evolution as “transcription machinery” (Noireaux, 2005), build upon such an informational model.

It may be wise to go back to, among others, Deleuze, Foucault, Bergson, Guattari, and to ask what philosophers may become in the age of informationalism.

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Notes

1. “le concept est de l'ordre du cri, C'est quelque chose de très vivant, un mode de vie.”
2. Deleuze's use of the term *haecceité* originates in Duns Scotus' definition of individuation as *haecceitas* “thisness” (cf. *Ordinatio* 2, d. 3, pars 1, qq. 1-6) in opposition to *natura communis*, e.g., common traits features existing in any number of individuals. Also Peirce uses the term as an existential qualifier.

Irreducible Complexity in Pure Mathematics

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1. Introduction

In 1956 an article by Ernest Nagel and James R. Newman entitled “Gödel’s proof” was published in *Scientific American*, and in 1958 an expanded version of this article was published as a book with the same title. This is a wonderful book, and it’s still in print.

At the time of its original publication, I was a child, not even a teenager, and I was obsessed by this little book. I remember the thrill of discovering the newly published *Gödel’s Proof* in the New York Public Library. I used to carry it around with me and try to explain it to other children.

Why was I so fascinated? Because Kurt Gödel uses mathematics to show that mathematics itself has limitations. How can this be? How could reason have limits? In fact, Gödel refutes the position of David Hilbert, who about a century ago declared that there was a theory of everything (TOE) for math, a finite set of principles from which one could mindlessly deduce all mathematical truths by merely tediously following the rules of symbolic mathematical logic. Such a theory is called a *formal axiomatic mathematical theory*.

My attempt to understand Gödel’s proof took over my life, and almost-half a century later, I have just finished writing a little book of my own. It’s my own version of Nagel and Newman’s *Gödel’s Proof*, in which everything is done completely differently. The only thing the two books have in common is their common goal of providing an auto-critique of mathematical methods and the fact that they are both small books.

Why did I have to completely rewrite Nagel and Newman? Because their exposition and Gödel’s original 1931 proof are both based on the two self-referential paradoxes: “This statement is false” and “This statement is unprovable.”¹

My approach is completely different. It's based on measuring information and on showing that some mathematical facts have no redundancy and cannot be compressed into any mathematical theory because these facts are too complicated, in fact, infinitely complex. This new approach suggests that what Gödel originally discovered was just the tip of the iceberg and that the problem is much bigger than most people think. And, amazingly enough, I have recently discovered that these ideas can be traced back to G.W. Leibniz in the late 17th century.

In this essay I'm going to try to outline some of these ideas. Please bear with me, since it is not really possible to present all the mathematical details in a short essay. Instead I'll just try to convey the general flavor of what is going on, using vague but hopefully suggestive analogies and much hand-waving. If you want to know more, you should read my new book, *Meta Math!*, which is as non-technical as I could make it, but takes the time to do things right. And there are a lot of other books on this subject, by me and by other people.

My story begins in 1686 with Leibniz's philosophical essay *Discours de métaphysique*, in English, *Discourse on Metaphysics*, where Leibniz discusses how we can distinguish between facts that follow a law, and lawless, irregular, chaotic facts. How can we do this?

Leibniz's idea is very simple and very profound. It's in section VI of the *Discours*. It's the observation that the concept of law becomes vacuous if arbitrarily high mathematical complexity is permitted, for then there is always a law. Conversely, if the law *has to be* extremely complicated, then the data is irregular, lawless, random, unstructured, patternless, and also incompressible and irreducible. A theory has to be simpler than the data that it explains, otherwise it doesn't explain anything.

2. Algorithmic Information

We live in an age of digital information: software, DNA, DVD's, digital cameras, etc. And the basic idea of algorithmic information theory is to look at the size in bits of computer software, the minimum possible size, without caring at all about the *speed* of this software.

Here is the basic insight, the basic model. It's a software view of science: A scientific *theory* is a computer program that computes our *observations*, the experimental data. And these are our two fundamental principles,

originally due to William of Occam and to Leibniz: The simplest theory is best (Occam's razor). This means that the smallest program that calculates the observations is the best theory. Furthermore, if a theory is the same size in bits as the data it explains, then it's worthless, because there is always such a theory (Leibniz). A theory is a compression of the data, comprehension is compression. And you compress things into computer programs, into concise algorithmic descriptions. The simpler the theory, the better you understand something. A very complex theory means something is wrong.

Then you define the *complexity* or, more precisely, the "algorithmic information content," of a set of facts (or any other digital object) to be the size in bits of the smallest program for calculating them (or it), no matter how slow. And a stream of bits is *irreducible* (also called "algorithmically random") if its complexity is equal to its size, in other words, if there is no good theory for it, no program for calculating it that is smaller than it is. In other words, such bit streams are incompressible, they have no redundancy; the best thing to do is to transmit them directly. You gain nothing from doing what DVD players and digital television attempt to do, which is to transmit instructions for reassembling the picture frames rather than the pictures themselves.

How close did Leibniz come to these modern ideas? Well, very close. He had all the key elements, he just never connected them. He knew that everything can be represented with binary information, he built one of the first calculating machines, he appreciated the power of computation, and he discussed complexity and randomness. All the key components of the modern theory of algorithmic information.

And if he had put all of this together, he might have been able to realize that one of the key pillars of his philosophical position can be severely questioned. For Leibniz, like Spinoza and Descartes, was a *rationalist*, he believed in the power of reason, he followed that continental philosophical tradition rather than the British school of empiricism, which is more impressed with facts than with thoughts and theories.

And one of the key elements of Leibniz's philosophy is what he called "the principle of sufficient reason," that everything happens for a reason. In other words, if something is true, it must be true for a reason. Hard to believe sometimes, in the confusion and chaos of daily life, in the contingent ebb and flow of human history. Ah, said Leibniz, even if we cannot always see a reason, perhaps because the chain of reasoning is long and

subtle, God can see the reason, it's there! The universe is rational. In fact, this is actually an idea that comes from the ancient Greeks.

Mathematicians certainly believe in reason and in Leibniz's principle of sufficient reason, because they always try to prove everything. No matter how much computational or experimental evidence there is for something, like the celebrated Riemann hypothesis or the $P \neq NP$ conjecture of theoretical computer science, mathematicians demand a proof, nothing less will satisfy them!

And here is where the concept of algorithmic information can make its surprising contribution to epistemology, to the philosophical discussion of the origins and limits of knowledge. What if we can find mathematical facts that are true for no reason, where would that leave our philosophy, what would it do to us?

In fact we can find irreducible mathematical facts, an infinity of them. Later in this essay I'll show you how. I'll exhibit an infinite irreducible stream of yes/no, true/false mathematical facts. These facts turn out to be not only computationally irreducible, they are even logically irreducible. In essence, the only way to prove such mathematical facts, is to directly assume them as new mathematical axioms, without using reasoning at all.

The concept of "axiom" is closely related to the idea of logical irreducibility. Axioms are mathematical facts that we take as self-evident and do not attempt to prove from simpler principles. All formal mathematical theories start with axioms, and then deduce the consequences of these axioms, which are called its theorems. That is how Euclid did things in Alexandria two millennia ago, and his treatise on geometry is the classical model for mathematical exposition, one of the all-time best-sellers of the Western World, even though Euclid's *Elements* is no longer taught in high-school the way that it was when I was a child.²

In ancient Greece if you wanted to convince your fellow citizens to vote with you on some issue, you had to reason with them. Which I guess is how they came up with the idea that in math you had to prove things rather than just discover them experimentally, which is all that it appears that previous cultures in Mesopotamia and Egypt did. And using reason has certainly been an extremely fruitful approach, leading to modern mathematics and mathematical physics and all that goes with it, including, eventually, the technology for building that extremely logical and mathematical machine, the computer.

So am I saying that in a way all this crashes and burns?! Yes, in a sense I am. My counter-example illustrating the limited power of logic and reason, my source of an infinite stream of irreducible/unprovable mathematical facts, is the number that I call Ω , capital omega, the last letter of the Greek alphabet. O-mega as opposed to o-micron, which means big-oh, not little-oh. Omega is typically used in the expression “from alpha to omega,” from the beginning to the end, or to denote something inaccessible or final, such as the omega point or the omega man.

So now let me tell you about Ω and why it provides us with an infinite stream of irreducible bits and unprovable facts.

3. The Number Ω

In a famous paper published in 1936 in the *Proceedings of the London Mathematical Society*, Alan Turing began the computer age by presenting a mathematical model of a simple general-purpose programmable digital computer. He then showed that there was something that no algorithm could accomplish and no mathematical theory could ever decide, namely whether or not a selfcontained computer program will eventually halt. This is Turing’s famous *halting problem*.

Of course, by running the program you can eventually discover that it halts. The problem, and it is an extremely fundamental one, is to decide when to give up. There is no general solution, even though a great many special cases can in fact be solved. And Turing showed in 1936 that there will never be a general solution; it’s impossible.³

Well, that’s the first step on the road to Ω .

The next step, which is often a fruitful approach, is to forget about individual cases of this problem, and consider the statistical ensemble. In other words, let’s ask if a program chosen at random ever halts. The probability of having that happen is my Ω number.

How precisely do you go about picking a program at random? Well, what you do is that every time your computer asks for the next bit of the program, you just flip a coin. So Ω is just the probability that a machine will eventually do something. Not a big deal!

For those of you who want to know more about how to define Ω , let me remark that Ω is actually the sum of $1/(\text{two raised to the power which is the size in bits of each program that halts})$. In other words, each N -bit program

that halts contributes precisely $1/2^N$ to the sum that defines Ω . Because if each bit of a program is chosen using an independent toss of a fair coin, head, 1, tails, 0, then the probability of getting any individual N -bit program is precisely $1/2^N$. And we want to know the total probability of all the programs that halt.

In other words, each N -bit program that halts adds a 1 to the N th bit in the binary expansion of Ω . Do this for all programs that halt, and you'd get the precise value of Ω .⁴ This may make it sound like you can calculate Ω with arbitrarily great accuracy, just as if it were $\sqrt{2}$ or the number π . However this is actually impossible, because in order to do it you'd have to solve Turing's halting problem. In fact, in a sense the halting probability Ω is a *maximally uncomputable* number.

So Ω cannot be computed, but it can be defined mathematically as a specific number. For this to work it is crucial that no extension of a valid program is a valid program, which guarantees that the sum over all programs that halt defining Ω converges to a value between zero and one instead of diverging to infinity. Such programs are called *self-delimiting*, they're the ones for which a halting probability can be defined. Also, I should mention that the precise numerical value of Ω depends on your choice of computer programming language, but Ω 's surprising properties aren't at all affected by this choice.

Okay, those are just details.

The next thing that's crucial for me to tell you is how you get an infinite irreducible stream of bits out of Ω .

Well, that's not difficult. Ω is a probability, which has to be between zero and one. Zero would mean no program halts, one would mean all of them do. Ω is actually greater than zero and less than one, because some programs halt and some don't. Then write, or more precisely, imagine writing Ω out in binary, in base-two notation. Just like the number π is 3.1415926... with an infinite sequence of digits, Ω , if you knew its precise numerical value, and if you wrote that out in binary, would give you something like 0.1110100... Let's forget about the initial 0 before the decimal point, and just consider the infinite stream of bits that comes after the decimal point.

Well, it turns out that these are our irreducible mathematical facts, this is an infinite irreducible stream of bits. The irreducible math facts are whether each individual bit is a 0 or a 1. There's no way to know that. These

turn out to be facts that are true for no reason, that are unprovable unless you adopt them as new axioms.

Why? Well, it's because Ω squeezes all the redundancy out of individual cases of Turing's halting problem. Ω is the most compact, the most compressed way of giving you the answer to all cases of the halting problem. In fact, knowing the first N bits of Ω would in principle enable you to decide whether or not each program up to N bits in size ever halts. From this it follows that you need an N -bit program in order to be able to calculate N bits of Ω . From this it also follows that you need N bits of axioms in order to be able to determine N bits of Ω . In other words, Ω is logically as well as computationally irreducible. Can you manage to see why? It's certainly not obvious.⁵

I remember realizing that this had to be the case for the first time when I was flying back to the IBM lab in NY after a visit to a university in late 1973 or early 1974. It was a beautiful day, and at that precise moment I was staring out the window at the Pentagon in Washington DC.

And the fact that Ω is irreducible immediately implies that there cannot be a theory of everything (TOE) for all of mathematics. Why?

The basic intuition is that once you squeeze all the redundancy out of anything, what you are left with is irreducible, and then whether each bit is 0 or 1 is a fact that in a sense is "true for no reason," it's a complete surprise, it's totally unexpected. So the bits of Ω are irreducible mathematical truths, they are mathematical facts that cannot be derived from any principles simpler than they are, and there are an infinity of them, an infinity of bits of Ω . Math therefore has infinite complexity, whereas any individual TOE only has finite complexity, and cannot capture all the richness of the full world of mathematical truth, only a finite part of it.

But what does it all mean? This doesn't mean that proofs are no good. And I'm certainly not against reason. Just because some things are irreducible, doesn't mean we should give up using reasoning.

But perhaps sometimes you shouldn't try to prove everything. Sometimes mathematicians should just add new axioms. That's what you've got to do if you are faced with irreducible facts. The problem is knowing that they are irreducible!

In a way, saying something is irreducible is giving up, saying that it can't ever be proved. Mathematicians would rather die than do that, contrasting sharply with their physicist colleagues, who are happy to be pragmatic and to use plausible reasoning instead of rigorous proof. But remem-

ber, to avoid an infinite regress, you've got to stop somewhere, you can't always prove everything from something else. And these irreducible principles, which are called axioms, have always been a part of mathematics, they are not something new. I'm just saying that there are a lot more of them out there than people suspected.

Physicists are certainly willing to add new principles, new scientific laws, in order to understand new domains of experience. Should mathematicians do the same thing that physicists do and add new axioms because they are pragmatically justified, even though they are not at all "self-evident?" This raises what I think is an extremely interesting question.

4. Is Math like Physics?

I don't want to get into a long discussion about this, because it's very, very controversial, but in fact there are a few of us who do think that math is like physics, sort of.

One of the people who does, or did, is Imre Lakatos, who left Hungary in 1956 and worked on philosophy in England. There Lakatos came up with a great word, *quasi-empirical*. That's the word that I use to describe my philosophical position on all of this: I think that math is quasi-empirical. In other words, I feel that math is different from physics, but perhaps not as different as most people think.

In science you compress your experimental observations into scientific laws, and in math you compress your computational experiments into mathematical axioms. What counts is the compression, that's what understanding is. It's the fact that you're putting just a few ideas in, and getting a lot more out; you're using them to explain a rich and diverse set of physical or mathematical experiences.⁶

If Hilbert had been right, math would be a closed system, with no new ideas coming in. There would be a static closed finished theory of everything for all of math, and this would be like a dictatorship. In fact, for math to progress you actually need new ideas and plenty of room for creativity, it does not suffice to mindlessly and mechanically grind away deducing all the possible consequences of a fixed number of well-known basic principles. And I much prefer an open system, I don't like rigid, totalitarian, authoritarian ways of thinking. (For more on a quasi-empirical view of math, see Tymoczko 1998.)

To end on a personal note, I've lived in both the world of math and the world of physics, and I never thought there was such a big difference between these two fields. It's a matter of degree, of emphasis, not an absolute difference. After all, math and physics co-evolved. Mathematicians shouldn't isolate themselves. They shouldn't cut themselves off from rich sources of new ideas.

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Notes

1. Let's start with the paradox of the liar: "This statement is false." This statement is true if and only if it's false, and therefore is neither true nor false.
 Let's consider "This statement is unprovable." If it is provable, then we are proving a falsehood, which is extremely unpleasant and is generally assumed to be impossible. The only alternative left is that this statement is unprovable. Therefore it's in fact both true and unprovable, and mathematics is incomplete, because some truths are unprovable.
 Gödel's proof constructs self-referential statements indirectly, using their Gödel numbers, which are a way to talk about statements and whether they can be proved by talking about the numerical properties of very large integers that represent mathematical assertions and their proofs.
 And Gödel's proof actually shows that what is incomplete is not *mathematics*, but individual formal axiomatic mathematical theories that pretend to be theories of everything, but in fact fail to prove the true numerical statement "This statement is unprovable."
 The key question left unanswered by Gödel: Is this an isolated phenomenon, or are there many important mathematical truths that are unprovable?
2. There are many well-known examples of *controversial* axioms, including:
 - the parallel postulate in Euclidean geometry,
 - the law of the excluded middle in logic,
 - the axiom of choice in set theory.

But what are examples of potential *new* axioms?

Elsewhere the author of this essay has proposed that some variant of the Riemann hypothesis might be pragmatically justified as a new axiom due to its diverse applications in number theory.

But there are much better examples of new axioms. Here are two that have emerged by group consensus in the past few years:

- the axiom of projective determinacy in set theory,
- the $P \neq NP$ conjecture regarding time complexity.

The latter example is particularly interesting as it has many important applications, as I'll now explain.

Most theoretical computer scientists are concerned with time complexity – the time required to compute things – not with program-size (or informational) complexity as in this essay. And at the present time this community believes that many important problems require an amount of time that necessarily grows exponentially, even though no one can prove it.

An example of this presumed exponential growth is determining whether or not a logical expression involving Boolean connectives is a tautology, that is, true for all possible assignments of truth values to its variables. This can be done via truth tables in an exponential amount of time by looking at all possible combinations of truth values. That this exponential time growth is necessarily the case is a consequence of the $P \neq NP$ hypothesis, currently believed and freely used by almost all people working in the field of time complexity.

3. A key step in showing that incompleteness is natural and pervasive was taken by Alan Turing in 1936 when he demonstrated that there can be no general procedure to decide if a self-contained computer program will eventually halt.

Why not? Well, let's assume the opposite of what we want to prove, namely that there is in fact precisely such a general procedure H , and from this we shall derive a contradiction. This is what's called a *reductio ad absurdum* proof.

So assuming the existence of H , we can construct the following program P that uses H as a subroutine. The program P knows its own size in bits N (there is certainly room in P for it to contain the number N) and then using H , which P contains, P takes a look at all programs up to a hundred times N bits in size in order to see which halt and which don't. Then P runs all the ones that halt in order to determine the output that they produce. This will be precisely the set of all digital objects with complexity up to a hundred times N . Finally our program P outputs the smallest positive integer not in this set, that is, with complexity greater than a hundred times N , and then P itself halts.

So P halts, P 's size is precisely N bits, and P 's output is the first positive integer having complexity larger than a hundred times N , that is, that cannot be produced by a program whose size is less than or equal to a hundred times N bits. However P has just produced this highly complex integer as its output, and P is much too small to be able to do this, because its size is only N bits, which is much less than a hundred times N . Contradiction! Therefore a general procedure H for deciding whether or not programs ever halt cannot exist, for if it did then we could actually construct this paradoxical program P using H .

Finally Turing points out that if there were a TOE that always enables you to prove that an individual program halts or to prove that it never does, whichever is the case, then by systematically running through all possible proofs you could eventually decide whether

individual programs ever halt. In other words, we could use this TOE to construct H , which we have just shown cannot exist. Therefore there is no TOE for the halting problem.

4. Let's look at an example. Suppose that the computer that we are dealing with has only three programs that halt, and they are the bit strings 0001, 000001 and 000011. These programs are, respectively, 4, 6 and 6 bits in size. And the probability of getting each of them by chance is precisely $1/2^4$, $1/2^6$ and $1/2^6$, since each particular bit has probability $1/2$. So the value of the halting probability for this particular computer is precisely

$$\Omega = \frac{1}{2^4} + \frac{1}{2^6} + \frac{1}{2^6} = \frac{1}{2^4} + \frac{2}{2^6} = \frac{1}{2^4} + \frac{1}{2^5} = .000110$$

We're adding a 1 bit into the 4th, 6th and 6th bits of this Ω . Note that we've gotten a carry out of the 6th bit position after the decimal point. Adding a 1 bit twice into the 6th bit position yields a 0 bit there and a 1 bit in the 5th bit position. The final value of Ω is the probability of getting one of these three programs by chance.

Here's an embarrassing question. What if we have a computer for which the two 1-bit programs 0 and 1 *both* halt? Then we would have

$$\Omega = \frac{1}{2} + \frac{1}{2} = 1$$

This is embarrassing because I said that Ω had to be greater than zero and less than one. What is going on here? Well, remember that I said that programs must be self-delimiting? This means that the computer decides by itself when to stop asking for more bits, each of which is determined by an independent toss of a fair coin.

The fact that programs are self-delimiting implies that no extension of a valid program is a valid program. Therefore if 0 and 1 were both programs that halt, then no other program could ever halt, and our computer would only be good for running two programs. That's not much of a computer! The halting probability Ω is only of interest, it only has surprising properties, when it is the halting probability of what is called a "universal" computer. That's a general-purpose computer that can run all possible algorithms, of which there are infinitely many.

This is an example of how the fact that no extension of a valid program is a valid program keeps Ω from being greater than 1.

5. Why is Ω irreducible/incompressible?

Well, let's assume that we are given the first N bits of the base-two numerical value of Ω . So we know Ω with accuracy one over two to the N , in other words, with N -bit accuracy. Our strategy is to show that this would tell us a lot about Turing's halting problem, which in fact we already know cannot be solved.

More precisely, if we can use the first N bits of Ω to solve the halting problem for all programs up to N bits in size, this will show that the first N bits of Ω cannot be produced by a program substantially less than N bits in size nor deduced using a formal axiomatic math theory with substantially less than N bits of axioms.

Why does knowing N bits of Ω enable us to solve the halting problem for all programs up to N bits in size? We can do this by performing a computation in stages, one for each K

$= 1, 2, 3, \dots$. At stage K run every program up to K bits in size for K seconds. Then compute a *lower bound* Ω_K on the halting probability Ω based on all the programs that halt that you discover at stage K . This will give you an infinite list of lower bounds Ω_K on the actual value of Ω .

These lower bounds on Ω will eventually get closer and closer to the actual value of Ω . And as soon as the first N bits are correct, you know that you've encountered every program up to N bits in size that will ever halt, for otherwise the lower bounds on Ω would then become larger than the true value of Ω , which is impossible.

It should be mentioned that the stage K at which the first N bits of Ω are correct grows immensely quickly, in fact, faster than any computable function of N .

For how far you can get in math without bothering with proofs, see Borwein and Bailey 2004, Borwein, Bailey and Girgensohn 2004.

6. Experimental mathematics is the idea of discovering new mathematical results by looking at many examples using a computer. While this is not as persuasive as a *short* proof – but it may be more convincing than a long and extremely complicated proof – for some purposes it is quite sufficient.

Such calculations, checking many diverse examples of a mathematical problem, are usually done using a symbolic programming language such as Mathematica or Maple, or using a numerical programming language such as MATLAB.

In the past this approach was defended with great vigor by George Pólya and by Imre Lakatos, believers in heuristic reasoning and in the quasi-empirical nature of mathematics.

In this generation, experimental mathematics has been promoted most forcefully by Jon Borwein and David Bailey, authors of a two-volume treatise on the power of experimental methods. Another eminent practitioner of experimental math is my IBM colleague Benoit Mandelbrot, of fractal fame. This methodology is also practiced and justified in Stephen Wolfram's *A New Kind of Science*.

Contemporary mathematicians are also fortunate to have a journal, *Experimental Mathematics*, where they can publish their numerical observations and conjectures.

Extensive computer calculations can be extremely persuasive, but do they render proof unnecessary?! Yes and no. In fact, they provide a *different* kind of evidence. In important situations, I would argue that *both* kinds of evidence are required, as proofs may be flawed, and conversely computer searches may have the bad luck to stop just before encountering a counter-example.

The Metaphysics of Information

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1. “Information”

If you think information is important – and I assume most people do — you must have some vague idea of what it is. Since enormous amounts of money are spent on its collection, storage, and retrieval, since people are paid (and, during wartime tortured) to divulge it, somebody must know what it is. Somebody must know what all the fuss is about. It is easy enough to find people who *think* they know what it is, but very hard to find two people who agree. I was recently involved in a panel discussion the topic of which was: What Is Information?¹ There was a computer scientist, a mathematician, an electrical engineer, a biologist, a librarian, and psychologist, a linguist, and, yes, even a philosopher (me). No one had trouble talking for ten minutes. No two people said the same thing. They weren’t even close.

Maybe it isn’t important to know what information is. I have been told that this is a philosopher’s question (the typical “What is X?” question), the answer to which the rest of the world can ignore with impunity. Or, if people really do need an answer, it is quite acceptable for everyone — or perhaps each discipline — to have its own answer. The man on the street means this, the computer scientist that, the mathematician another thing, and the librarian still something else. If the philosopher wants to play this game, he can make up his own definition. Or he can try to figure out what everyone else means. All that is really necessary — and this is necessary only if people want to talk to and understand each other — is that people know what others mean.

I don’t think this will do. It leaves it a mystery why everyone thinks information is important or, if everyone who uses this word is really talking about *different* important things, why they insist on using the word “information” for *their* important thing. Why don’t they use some other word — like, maybe, “brick”, “fence post” or “vitamin”? Bricks, fence posts, and vitamins are important too, but nobody refers to them as information. Why not? Because we know what bricks, fence posts, and vitamins are, and they

clearly aren't information. Why is this so clear? Why can't a brick or a fence post be information? Because information is an epistemologically important commodity, and bricks and fence posts, though important, are not important in that way. Information has something to do with (perhaps it is even essential for) knowledge, and since knowledge is important, so is information. That is why people who would like a piece of the knowledge business — and that is a lot of people these days — want their product to be (or at least be intimately related to) information. So everybody ends up talking about his or her product as information.

This, I know, is a cynical view about the conceptual (at least verbal) mess in this area. The cynicism may or may not be justified. I don't know. But I do know there is a mess in this area and, as a result, a lot of confusion in the information sciences about what, exactly, information is and, therefore, what these sciences are supposed to be sciences of. With that in mind, what I hope to do in this paper is not to give a theory of information (I tried to do that elsewhere),² but to offer something more modest. I want to say what, at a commonsense level, information is. Wittgenstein (*On Certainty*, §260) said he preferred to reserve the expression "I know" for the cases in which it is used in normal linguistic exchange. I think that is good advice. I will try to say as clearly as I can what, in normal linguistic exchange, information is. If we are to build a theory of information, if there is ever to be a science of information, that, after all, is what we want a theory, a science, of — whatever we, in normal conversation, are talking about when we talk about information.

Information, as ordinarily understood, has three essential properties: (1) it is an intentional, a semantic, entity; (2) it is true; and (3) it is transmissible. Anything that lacks one or more of these properties isn't information.

2. Intentionality

Information is always information *about* something. If it isn't about anything, it isn't information. That is why bricks and fence posts aren't information. They aren't about anything. If someone or something sends or receives information, it always makes sense to ask, and there always has to be an answer to, the question, "Information about what?"

The only reason I can see why anyone would deny this is if they confused a signal with the information a signal carries — confused, that is,

information with the objects and events that carry it. A brick isn't information, but it might carry information. It might, for instance, carry information in its shape, color, size, or material composition, about its place and manner of manufacture. Or it might, by its deliberate placement and orientation, tell (inform) us where an accomplice is hiding. Similarly, we can use a fence post as a rough sundial — thus using the post (and its shadow) as a source of information about the time of day. Clearly, though, the information provided is not the brick, the post, or the shadow. It is what the brick, post, or shadow tell us about something else — in this case the time of day, place of manufacture, or location of an accomplice.

We have long been warned not to confuse words with what these words mean or refer to. The word “red” isn't the color red. Why, then, conflate the electrical charges in a silicon chip, a gesture (a wink or nod), acoustic vibrations, or the arrangement of ink on a newspaper page with what information these conditions convey? Syntax, organized facts about the bearers of meaning and information, is one thing; semantics, facts about the meaning or information they bear, is something altogether different. Just like meaning, information, is an abstract entity. It exhibits intentionality. It has aboutness. It comes in propositional form. Bearers of information, on the other hand, the objects and events (signals) that carry information, are, of necessity, concrete, observable entities. They are not about anything.

Information I give someone about my sister — that she lives in Colorado — isn't the same as information you give them about your sister — that she lives in Colorado — even if these pieces of information are embodied in physically indistinguishable forms — viz., the words “My sister lives in Colorado.” The reasons the information is different is not simply because the words come from different sources. Words can come from different sources and be the same. I can tell someone that my sister lives in Colorado and you can, by using different words, tell them the same thing (“Fred's sister lives in Colorado”). No, what makes the information I convey by telling someone my sister lives in Colorado different from what you convey by using these same words is not that the signals are different (they are, in fact, qualitatively the same), but that their reference is different. We are talking about different people. The intentionality is different. Different propositions are being expressed. That is why tree stumps can say something different — communicate different information — even when they are indistinguishable. The rings in this tree stump say that *this tree* is forty years old; the

rings in that other stump say that *that tree* is forty years old. A completely different piece of information.

3. Truth

Not only must information be about something, what it says about what it is about must be true for it to count as information. If it isn't true, it isn't information. Not every proposition is information. Only the true ones are (and not even all of them are — see § 4, Transmissibility).

I know we sometimes talk about misinformation and false information. This leads some people to conclude, mistakenly, that information needn't be true since, clearly, false information isn't true. This, I think, is a pretty heavy-handed treatment of ordinary language. It is like concluding that not all ducks are animals because decoy ducks aren't animals. The right conclusion to draw from the existence of decoy ducks, of course, is not that ducks don't have to be animals, but that decoy ducks aren't ducks. Likewise, the proper conclusion to draw from the existence of false information is not that information needn't be true. It is, rather, that false information is not information. False information is *fake* information and fake information is not a species of information any more than fake diamonds are a kind of diamond or phony dollar bills are (real) dollar bills.

I think that what fosters this tendency to think that information needn't be true is the mistaken assimilation of information to representation. Despite its falsity, a misrepresentation (a false representation) is nonetheless a representation. What is said is false, but something is still said. Things are verbally represented to be a certain way even when they are not the way they are represented to be. If you do not know whether Judith represented her whereabouts correctly, you still know she represented her whereabouts. You just don't know how well, how fully, how accurately, how truthfully, she represented it. Representation is like linguistic meaning. Words can mean that I'm at home even when I'm not at home. Words, and the people who utter those words, can represent things to be so that are not so. Misrepresentation is a species of representation. But information is not like this. Misinformation is not a piece of information of the false variety. It is not information at all. If you don't know whether what Judith told you about her whereabouts is true or not, you don't know whether she gave you information about her whereabouts. If she says she was at home on the

night of the crime, you know she *said* she was home. She *represented* herself as being home on that night. But you don't know — not yet anyway — whether her testimony provided information about her whereabouts that night. You won't know whether it provided information until you find out whether what she said is true — whether, in fact, she was at home that night.

If you doubt this, think about the role information plays in your daily life and what makes it such a valuable commodity. When you seek information in an airport or train terminal about how to get to Kirchberg am Wechsel from Vienna you aren't interested in merely being entertained by meaningful statements on the topic of Austrian geography. What you want are meaningful *true* statements. That is why you describe what you seek as information. You seek information because you want to know, and information provides what is needed to know: the truth. That is why in your efforts to find out how to get to Kirchberg you consult people who already know or can quickly find out. They already have the truth about these matters and so they can impart it to you. That is what information booths are for. If a person at the information booth tells you that Kirchberg am Wechsel is 400 miles due north of Vienna, you have a legitimate complaint. They cannot excuse their incompetence or deception by telling you that you only asked for information. You didn't ask for *true* information. That would be silly. In asking for information, one is asking for the truth.

This is part (but only a part) of the reason information is important. It is important because truth is important and information gives you the truth. That is why, from an epistemological standpoint, information is so much more important than meaning. Meaning can be either true or false. "Kirchberg is north of Vienna" is as meaningful as "Kirchberg is south of Vienna", but both statements can't be information because information has to be true, and both statements can't be true.³

I have said that information is what one needs to know, and that that is why it is important. It is, however, not *all* one needs to know. One may receive information about how to get to Kirchberg from Vienna and not be able to access (decode) it. The clerk at the information booth gives me the directions in German and I don't understand German. So although I've been given information about where Kirchberg is, I don't yet know where Kirchberg is. What I need besides the information is a good German-English dictionary. I need a way of extracting this information from the written or spoken message I have been given.

Having the information without being able to access it, without knowing what the information is or, perhaps, without even knowing that it is information, is a common enough occurrence. An expert on radioactivity tells me the half-life of radium. I don't realize he is an expert, and I don't believe him. I receive information and it doesn't generate knowledge because, in this case, it doesn't generate belief. Or I, a novice in the laboratory, observe the litmus paper turn blue and remain ignorant of the fact that the liquid in which it is placed is an acid. I don't realize that the paper carries this kind of information about acidity. Once again, the information is there in the condition I observe to be so, but I don't understand the language. I need a translation manual. In this case, I need to learn a little chemistry.

So information isn't sufficient for knowledge. Necessary, but not sufficient. It provides something, the truth, that is required for knowledge, but more is needed.

Skeptics, or simply advanced thinkers who don't like to talk about truth, will not like this result. They won't like it because, they will say, we cannot know what is true. If, then, information must be true to be information, we cannot know whether we have information or even whether there even is information to be had. Information, they will insist, is a useless commodity if it is impossible to know when you've got it.

This, I suspect, is the attitude of computer scientists who prefer to speak of anything that can be included in a database, whether it is true or false, as information. Computers, of course, can't distinguish true propositions from false propositions. Maybe (or so skeptics are inclined to think) our brains can't either. Feed a proposition in — that Kirchberg is 400 miles due north of Vienna, for instance — and the computer (or the brain), if it doesn't already have information that conflicts with this proposition, will treat it as information, a secure point for reasoning, problem solving, and inference. Everything that comes in, true or false, is treated as grist for the computational mill. For purposes of computation, for purposes of reaching a conclusion from the propositions existing in memory, the false is as good as the true. So, for computational purposes, for purposes of understanding the operation of computers (including the brain) why (one may ask) limit information to the true?

If your only interest is understanding computation, there is no reason to treat truth as an important commodity and, therefore, no reason to value information. Truth doesn't change anything. Valid arguments don't need

truth. False propositions work just as well. You can digitalize the false as easily as the true. But — and this is the important point — cognition in its most general sense is not just a matter of computation. It's not just a matter of determining that A follows from B, that C is probable relative to D, or that E is the best explanation of F. Computation is an instrument in a broader cognitive enterprise whose objective is getting things right, reaching true conclusions from available premises. That is why, for cognitive purposes, information is important. It provides what is needed in order for computation to get you where you want to go — the right answer, a true conclusion. Without information computation is worthless. We have a brain, yes, and it is fair to say that the brain's primary business is computation. So, for purposes of understanding the operation and function of the brain, just as for purposes of understanding the operation and function of silicon computers, truth — and thus information — isn't that important. It is dispensable.

Besides a brain, a computational organ, though, humans also have eyes and ears, and it is surely the business of these organs to supply the brain with what it needs — information — to reach *true* conclusions about the world. Without information, computational excellence is biologically worthless. What good is flawless reasoning if everything you conclude is false? That, indeed, is why information, though not particularly relevant to the business of computer (or, indeed, library) science, is absolutely essential to the cognitive life of the animals who use computers and libraries. Unlike machines and libraries, animals need to know. They need information. Computers and libraries don't. Nothing in the operation of a computer or of a library need change if we imagine everything passing through it to be false. It is different with animals.

4. Transmissibility

We send and receive information. We transmit it over telephone lines, by letters and photographs, in magazines and newspapers, and through the air. Light reflected from objects and sound emanating from them is full of information. That is why we have eyes and ears. If information couldn't move from one place to another, if it wasn't transmissible, it would be a useless commodity. It needs to be transferred to where it is needed — most often, in here, in the heads of living creatures, so it can be used in the service of need and desire satisfaction.

People (and dictionaries) sometimes confuse information with knowledge, but the transmissibility of information should be enough to distinguish these two items. I know things and you know things, and we can teach each other things. You can tell me what you know and give me knowledge. That is what education is about. We may — and sometimes do — speak of this as transferring or communicating knowledge, but we do not, not literally, transfer or transmit knowledge. It isn't knowledge that travels down the telephone line or (via electromagnetic waves) through the air. You don't give me your knowledge when you teach me something. You've still got it. You give me something that enables me to know, but what passes between us isn't knowledge. If it were knowledge, philosophers would be confused in their claims that belief was an ingredient in knowledge since what passes between teacher and student (a typed note, acoustic vibrations, light) clearly doesn't believe anything. So it isn't knowledge that is transmitted from one person to another. What is it then? It is information, of course: that which, by providing what is needed to know, gives knowledge to the person who receives it.

You may be wondering, though, how an abstraction like information can be moved through space? We can carry a brick or a fence post, good concrete space-time entities, from one place to another. We can transmit electrical current and electromagnetic waves from one place to another. But propositions? True propositions? How do you move a proposition, an abstract entity, from Chicago to Vienna? How do propositions, true propositions, entities that don't exist in space, change spatial location?

This may not seem like much of a problem. After all, we know how to transmit meaning, and meanings are as abstract, as non-spatial, as information. Write down what you mean, put it (what you've written) in a stamped envelope, deposit it in the mailbox, and — bingo! — meaning gets from Chicago to Vienna in a few short days. The meaning of the ink marks doesn't change in transit. So, in a sense, the meaning goes with the ink marks. It isn't lost. It may be thought, therefore, that the same is true of information. Information travels with the objects and events that carry information. Move these objects — written words, say — from Chicago to Vienna, and the information they carry (if there is any) goes with it. When you transmit a proposition, a meaning that is either true or false, you don't, when it is true, leave its truth behind. So you don't leave information behind.

Unfortunately, this quick answer won't do. The reason it won't is that information isn't *just* a true proposition. If that were all it was, there would be no problem transmitting it. You would do it the same way you do it with meaning. But information about X, although it is a true proposition about X, isn't *just* a true proposition about X. If something is information, it is true, yes, but there are true propositions about X that aren't information about X. To see why consider a familiar example in epistemology. A broken (12 hour display) clock tells the right time twice a day. Twice a day, that is, it says something true. But it *never* conveys information. You can never learn what time it is from such a clock even when it says something true. Broken clocks do not "tell" the time, not even twice a day. They do, however, twice a day, impart the truth.

I know next to nothing about quantum electrodynamics. So if you are looking for information about quantum electrodynamics, you are well advised to seek it elsewhere. Nonetheless, though I have no knowledge about this subject, I can quite easily communicate as many truths about it as the most knowledgeable expert. I merely take every proposition about this topic and assert both it and its negation. Half of what I say will be true. Unlike the expert, though, *none* of my declarations will convey information. You are not going to learn anything about electrodynamics from me. You will learn something from the expert and this despite the fact that I've told you everything he has. The communication of truth, though it is necessary for, is not sufficient for the communication of information. Something more is needed. What might this be?

In order to transmit information you must transmit not only the truth, but also what it takes for a suitably prepared receiver to *know* the truth you transmit. The relevant epistemic credentials, what it takes (besides truth) to produce knowledge, must also be communicated. That is why we use measuring instruments, gauges, indicators, alarms, and such — instruments that are reliably connected to the facts they provide information about. When working properly, these devices not only give one the truth about things one (typically) does not observe for oneself, but they connect one, by means of some reliable mechanism, to the facts in a way that enables one to learn what these facts are. You don't see the gas in your automobile gas tank, but the fuel gauge you do see, if it is working properly, carries information about how much gas there is in the tank. You can, therefore, come to know how much gas there is by consulting the gauge. The instrument creates a reliable connection, a channel, between you and the facts you seek informa-

tion about. This is why, in our quest for knowledge, we seek information from the experts, the people who know. People who know have the requisite credentials. They are, in this sense, our gauges and meters. They put us in touch with the facts we seek information about. Having observed things for themselves, or having obtained information from people who have, they are connected to the facts we seek information about in a way that makes their utterances authoritative. Their utterances are, in this way, like the pointer readings on a reliable indicator. That is why a genuine informant not only delivers the truth (an ignorant meddler can do this much). He or she creates a connection between source and receiver that enables the receiver to know the truth. Ignorant meddlers don't do that.

Information is transmitted, then, when this knowledge-conferring connection or channel between source and receiver, between facts to be known and a potential knower, is extended through space. Extending it is what copper wires, radio waves, light, sound, and newsprint allows us to do. I know my car keys are in my pocket because I can, by putting my hand in my pocket, feel them. In this case, tactile perception makes what happens in my brain depend on what is in my pocket. Information about my pocket is transmitted via nerves to my brain. I can, if I choose, now extend the causal influence of the keys in my pocket by telling you what is in my pocket. That makes what happens in your brain depend, to some extent, on what is in my brain and, therefore, on what is in my pocket. Information is transmitted. You now know where my keys are.

What is left for a genuine theory of information, it seems to me, is some systematic and revealing account of what this extendable, and knowledge conferring, relationship is. What, exactly, is it we must communicate with the truth to make the truth we communicate information? All I hope to have told you here is that this, indeed, is what we are looking for when we look for a theory of information. That is what a science of information should be a science of.

References

- Dretske, F. 1981. *Knowledge and the Flow of Information*. Cambridge, MA: MIT Press.
- Wittgenstein, L. 1969. *On Certainty*. Oxford: Blackwell.

Notes

1. At Duke University, 2004.
2. Dretske 1981.
3. For more on the distinction between meaning and information, see Dretske 1981, pp. 41-44.

A Subjectivist Interpretation of Relevant Information

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1. Introduction

A frequent complaint about current theories of information¹ is that they are utterly useless when it comes to establishing the actual *relevance* of some specific piece of information. As a rule, agents assume that some content is by default an instance of information (Sperber and Wilson [1995]). What they often wonder is whether and how far that content may contribute to the formulation of their choices and purposes, the development of their decision processes and eventually the successful pursuit of their goals.

In light of this problem, this paper pursues two goals. The first is to provide a subjectivist interpretation of epistemic relevance (i.e. epistemically relevant semantic information, more on this presently), thus satisfying those critics who lament its absence and, because of it, may be sceptical about the utility of using information-theoretical concepts to tackle conceptual problems and cognitive issues in real life. The second goal is to show that such a subjectivist interpretation can (indeed must) be built on a veridical conception of semantic information, thus vindicating a strongly semantic theory of information (Floridi [2004b]) and proving wrong those critics who argue that misinformation can be relevant.

The two goals are achieved through a strategy of progressive refinements. In § 2, the distinction between system-based or causal and agent-oriented or epistemic relevance is introduced. In § 3, I discuss the most common and basic sense in which semantic information is said to be epistemically relevant. This has some serious shortcomings, so, in § 4, the basic case is refined probabilistically. The new version too can be shown to be only partly satisfactory, so in § 5 there will be a second, counterfactual revision. The limits of this version are finally overcome in § 6, where the analysis is completed by providing a conclusive, meta-informational refinement. In § 7, some of the advantages of the metatheoretical revision are

illustrated. In § 8, I briefly outline some important applications of what I shall label the subjectivist interpretation of epistemic relevance. In § 9, I return to the problem of the connection between a strongly semantic theory of information and the concept of epistemic relevance and explain why misinformation cannot be relevant. In § 10, I conclude by briefly summarising the results obtained and the possible work that lies ahead.

A final warning before starting: “information” can mean many things (Floridi [2004a]; Floridi [2005a]). In what follows, I concentrate only on information understood as semantic information about reality, i.e. factual information with an epistemic or cognitive value. A train timetable, a theory in a physics book, the map of the London underground, a police report about a road accident, the description of Peter’s breakfast, the bell ringing when someone is at the door, are all typical illustrations that may be kept in mind.

2. Epistemic vs. Causal Relevance

Following previous taxonomies by Cohen [1994] and Borlund [2003], approaches to the study of relevance can be divided into two groups, depending on whether they focus on a more system-based or a more agent-oriented concept of relevance. System-oriented theories (S-theories) usually analyse relevance in terms of *topicality*, *aboutness* or *matching* (how well some information matches a request), especially in the information retrieval (IR) literature, and various forms of *conditional in/dependence* (how some information can help to produce some outcome), especially in logic, probability theory, philosophy of science and AI.

Agent-oriented theories (A-theories), on the other hand, tend to analyse relevance in terms of *conversational implicature* and *cognitive pertinence*, especially in philosophy of language, pragmatics and psychology, and perceived *utility*, *informativeness*, *beneficiality* and other ways of “bearing on the matter at hand” in relation to an agent’s informational needs, especially in IR literature and in epistemology. Adapting a distinction introduced by Hitchcock [1992], S-theories and A-theories may be seen to be interested mainly in *causal relevance* and *epistemic relevance* respectively.

S-theories clearly do not try to define, but rather presuppose, the fundamental concept of relevance understood as a relation between some information and an informee.² A similar conclusion may be reached regarding

the logical literature, which has concentrated mainly on S-theories, providing a variety of formalizations of logics for relevance-related notions such as conditional independence, subjunctive conditionals, novelty, causal change and co-variance (also known as perturbation models).³ In this context, Weingartner and Schurz [1986] distinguish between two types of relevance, one *à la* Aristotle (a-relevance) and the other *à la* Körner (k-relevance). Their point is that “an inference (or the corresponding valid implication) is a-relevant if there is no propositional variable and no predicate which occurs in the conclusion but not in the premises. And an inference (or in general any valid formula) is k-relevant if it contains no single occurrence of a subformula which can be replaced by its negation *salva validitate*”.⁴ Clearly, neither a-relevance nor k-relevance addresses the problem of epistemic relevance. It is not surprising then that some years later, in a ground-breaking article on relevant properties and causal relevance, Delgrande and Pelletier [1998] could still conclude that “as mentioned at the outset, we feel that ‘relevant’ is a concept for which we have no deep understanding” (p. 166). They made no attempt to connect their analysis to an informee-oriented explanation of epistemic relevance. However, in an equally important work on relevance relations in propositional logic, published the year before, Lakemeyer [1997] had already tried to bridge the gap between the two kinds of relevance: “Perhaps the most distinctive feature that sets this work apart from other approaches to relevance is the subjective point of view. In particular, we try to capture relevance relations relative to the deductive capabilities of an agent. For example, two agents who are given the same information may very well differ in their opinion about whether *p* is relevant to *q*. Even the same agent may at first miss a connection between the two, which may be discovered upon further reflection. For instance, a student solving a geometry problem involving a right-angled rectangle may not see the connection to the Pythagorean Theorem.” (p. 138) We shall see that this is a promising starting point.

The current situation can be summarised thus: some philosophical work has been done on several formal aspects of system-based or causal relevance, but the key question, namely what it means for some information to be relevant to some informee, still needs to be answered. We lack a foundational theory of agent-oriented or epistemic relevance. The warming up is over. The time has come to roll up our sleeves.

3. The Basic Case

Strawson once remarked that “stating is not a gratuitous and random human activity. We do not, except in social desperation, direct isolated and unconnected pieces of information at each other.” (Strawson [1964], p. 92). Rather, according to his Principle of Relevance, we “intend in general to give or add information about what is a matter of standing or current interest or concern.” (p. 92). He was right, of course, and one may add that giving or adding information happens most commonly through interactions of questions and answers. So let us start from an abstract definition of the most basic case of relevant information and then a couple of examples.

It is common to assume that some information i is relevant (R) to an informee/agent a with reference to a domain d in a context c , at a given level of abstraction⁵ (LoA) l , if and only if:

- 1) a asks (Q) a question q about d in c at l , i.e. $Q(a, q, d, c, l)$, and
- 2) i satisfies (S) q as an answer about d in c , at l , i.e. $S(i, q, d, c, l)$

In short:

$$R(i) \leftrightarrow (Q(a, q, d, c, l) \wedge S(i, q, d, c, l)) \quad [1]$$

The basic idea expressed by [1] is simple: “the train to London leaves at 13.15” is relevant to Mary if and only if Mary has asked for that piece of information about train timetables in such and such circumstance and with the usual linguistic conventions, and “the train to London leaves at 13.15” satisfies her request.

Formula [1] is what we find applied by services like Amazon or eBay, when they suggest to a user a new item that might be relevant to her, given her past queries. It is also what lies behind the working of databases and Boolean searches, including Google queries.

3.1 Advantages of the basic case

The formulation provided in [1] has several advantages, which explain why it is so popular.

a) [1] explicitly identifies semantic information as the ultimate relevance-bearer. Other candidates in the literature on relevance comprise events, facts, documents, formulae, propositions, theories, beliefs, and messages, but Cohen [1994] has convincingly argued that relevance is proposi-

tional. He is largely correct, but while any proposition may be interpreted informationally, not all semantic information (e.g. a map) is propositional, so [1] simply brings to completion his reduction.

b) [1] takes into account the informee's interests by explicitly making the relevance of i depend on her queries. No semantic information is relevant *per se*, relevance being an informee-oriented concept, as anyone who has been listening to airport announcements knows only too well. This move is crucial, since it means that causal relevance can be better understood if the informee is considered part of (i.e., is embedded in) the mechanism that gives rise to it. More explicitly, this means grounding relations of causal relevance on relations of epistemic relevance.

c) [1] couples relevance and the domain d about which, the context c in which, and the LoA l at which the relevant information is sought. Relevance is *situational* (Borlund [2003]): the same informee can find the same information relevant or irrelevant depending on d , c and l .

d) [1] analyses relevance *erotetically*, in terms of logic of questions and answers (Groenendijk [2003]), and this is a strength, since it is a standard and robust way of treating semantic information in information theory (Shannon and Weaver [1949 rep. 1998]), in information algebra (Kohlas [2003]) and in the philosophy of information (Floridi [2004a]). Note that the class of questions discussed excludes those which are "loaded".⁶

e) [1] also seeks to provide an *objective* sense of relevance insofar as i is not any information, but only the information that actually satisfies q at some LoA l .

f) Finally, [1] constrains the amount of *subjectivity* involved in the analysis of relevance. This is achieved by assuming that the agent a in [1] is a *type of rational agent* which satisfies the so-called Harsanyi doctrine (Harsanyi [1968]). This point deserves some comments.

According to the Harsanyi doctrine, also known in game theory as the "common prior assumption", if two or more rational agents share a set of beliefs (the common prior assumption) about the possible state of the world, expressed by means of a probability distribution over all possible states, then – if they receive some new information about the world and if they update their set of beliefs by making them conditional (Bayesian learning) on the information received – they obtain the same revised probability (the posterior probability). So, if their new, updated beliefs differ, the conclusion is that this is because they have received different information. As Aumann

[1976] synthetically put it: “differences in subjective probabilities should be traced exclusively to differences in information”.

The model is both famous and controversial. In our case, it can be used not as an abstract, if still phenomenologically reliable, description of agents’ behaviour, but as a definition of what an idealised yet not unrealistic rational agent should be. The proposal is to define a as belonging to the class of (rational) agents who, if they share the same information about the probable realization of an event, should hold the same beliefs about it (they reach the same subjective probability assignments). This allows one to treat differences in beliefs among rational agents, and hence in their querying processes, as completely explainable in terms of differences in their information.⁷ In game theory, this is called reaching consistent alignment of beliefs.

To conclude, the connection between the informee-oriented and the query-satisfaction-based features explains that [1] supports a *subjectivist* interpretation of epistemic relevance in terms of the degree of a ’s interest in i . It is the sense in which one speaks of a subjectivist interpretation of probability, and should not be mistaken for any reference to the idiosyncratic inclinations of an empirical epistemic agent or their phenomenological analysis, as can be found e.g. in Schutz [1970].

3.2 Limits of the basic case

Common sense and scientific literature thus provide a good starting point, namely [1]. Despite its popularity and several advantages, however, the basic case is severely limited. One main shortcoming is that [1] is brittle, in that it is forced to declare i irrelevant when condition $Q(a, q, d, c, l)$ is not satisfied. Obviously, even if a does not ask q , i (understood, following [1] as the answer to q about d in c at l) may still be highly relevant to a . This is what researchers and salesmen alike find distressing.

4. A probabilistic revision of the basic case

The first step is to revise [1] by making more explicit the relation between i and q . We can then move from a rigid double-implication to a more flexible, functional relation between the degree of relevance and the degree of probability of the two conditions concerning the questioning and the answer.⁸

Call A the degree of *adequacy* of the answer, that is, the degree in which i satisfies q about d in c at l . One can define A as precisely as one wishes by adapting the statistical concept of *validity*. *Validity* is the combination of *accuracy* and *precision*, two other technical concepts also borrowed from statistics.⁹ We shall say that i is an *adequate* answer to q insofar as it is a *valid* answer to q , that is, insofar as it is both an *accurate* and a *precise* answer to q .

We can now make [1] more resilient by considering the probability that a may ask q and the probability that i may answer q adequately. Unfortunately, the probability of asking a question is unrelated to the probability of receiving an adequate answer (or life would be much easier), so the two events are independent and their conjunction translates into a simple multiplication. By adopting this refinement we obtain:

$$R(i) = P(Q(a, q, d, c, l)) \times P(A(i, q, d, c, l)) \quad [2]$$

4.1 Advantages of the probabilistic revision

[2] combines the advantages of [1] with the possibility of talking about degrees of epistemic relevance (not just Boolean quantities) and adequacy. This is coherent with a broader informational approach: in [2], the more likely a is to ask q and the more adequate i is as an answer to q , the more relevant i becomes to a .

4.2 Limits of the probabilistic revision

The main disadvantage of [2] is that the epistemic relevance of i decreases too rapidly in relation to the decrease in the probability of Q , and it becomes utterly counterintuitive in some cases. Realistically, the informee a cannot be considered omniscient, even if a is assumed to be so modal-logically (Floridi [2006]). The world is informationally opaque to a , at least empirically, so a may often fail to request the information that would actually be epistemically relevant to her, seen from a sort of God's-eye perspective. What happens when the probability that a may ask q is less than 1? As Figure 1 shows, in [2] there are four possible trends, since R tends towards 0 or 1 depending on whether both $P(Q)$ and $P(A)$ tend towards 0 or 1. Three out of four cases in [2] are realistic and unproblematic. But when $P(Q)$ tends to 0 while $P(A)$ tends to 1, we re-encounter the counterintuitive collapse of epistemic relevance already seen in § 1.2.c: i is increasingly irrelevant

epistemically because it is increasingly unlikely that a may ask q , even when the adequacy of i is made increasingly closer, or equal, to 1.

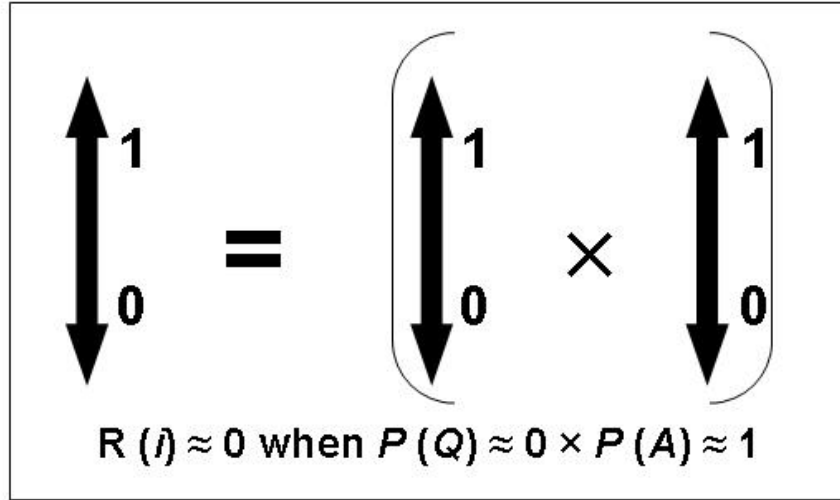


Figure 1: Four trends in formula [2]. The highlighted case is the problematic one.

5. A counterfactual revision of the probabilistic analysis

The collapse can be avoided by revising [2] counterfactually. Instead of analysing the probability that a might ask q , one needs to consider two scenarios:

- the case in which a asks q , i.e. $P(Q) = 1$, and
- the case in which a does not but might ask q , i.e. $0 \leq P(Q) < 1$.

In the former case, the only variable that counts is the probability that i might be adequate. In the latter case, one can consider the probability that a would (have) ask(ed) q if a were (had been) sufficiently informed. Using the standard symbol “ $\square \rightarrow$ ” for the counterfactual implication and simplifying a bit our notation by omitting (q, d, c, l) , we obtain:

$$R(i) = \begin{cases} P(A(i)) & \text{if } P(Q(a)) = 1 \\ P(Ia(i) \square \rightarrow Q(a)) \times P(A(i)) & \text{if } 0 \leq P(Q(a)) < 1 \end{cases} \quad [3]$$

The second line in [3] states that the epistemic relevance of i is a function of the probability that i might be an adequate answer to q times the probability that a would ask q if a were sufficiently informed about the availability of i .

5.1 Advantages of the counterfactual revision

The advantages of [3] are all the advantages of [1] and [2] plus the further advantage of solving the problem of the opacity of epistemic relevance, seen in § 4.2, and its corresponding collapse.

5.2 Limits of the counterfactual revision

The main limit of [3] may be labelled the counterfactual paradox of semantic information and is not avoidable without further revising the approach. According to [3], assuming, for the sake of simplicity, that $P(A(i, q, d, c, l)) = 1$, i would be maximally relevant epistemically only if the probability is also 1 that, if a had been informed that i was the answer, then a would have asked q to obtain i . But this conditional reminds one of *Meno's Paradox*.¹⁰ For, if a had held i in the first place, *strictly speaking* a would not have needed to ask q to obtain i , so it is not true that a would have asked q had he held i . It follows that [3] *largely* fails to deliver a good analysis of epistemic relevance. “Strictly speaking” and “largely” are emphasised because, in practice, i would be epistemically relevant if a is assumed to be looking not for new information but for *confirmation*: a may ask q even if a already knows that i is the answer, if a wishes to be reassured that i is indeed the answer. Yet double-checking procedures are insufficient to rescue the analysis, for the complete reduction of relevance to confirmation would work as a *reductio ad absurdum*.

6. A metatheoretical revision of the counterfactual analysis

The solution is to bypass the paradox by revising [3] metatheoretically.¹¹ One can still rely on a 's rationality to gauge the epistemic relevance of i to a herself without providing the actual content of i but only some information about its availability. For if a had been informed that new information (ni) about d was available, insofar as a would then have asked a question to retrieve i , it follows that i would have been correspondingly more or less epistemically relevant to a . Now, a simple way of constructing ni is by changing the LoA l . For example, if a had been informed that something had changed regarding the schedule of the meeting (higher LoA), a would probably have asked what had changed about it, and the information that

the meeting had been cancelled (lower LoA) would then be correctly analysed as highly epistemically relevant to a . In this way we obtain:

$$R(i) = \begin{cases} P(A(i, q, d, c, l_m)) & \text{if } P(Q(a, q, d, c, l_m)) = 1 \\ P(Ia(ni, d, l_n) \square \rightarrow Q(a, q, d, c, l_m)) \times P(A(i, q, d, c, l_m)) & \text{if } 0 \leq P(Q(a, q, d, c, l_m)) < 1 \end{cases} \quad [4]$$

or, by simplifying our notation:

$$R(i) = \begin{cases} P(A(i, l_m)) & \text{if } P(Q(a, l_m)) = 1 \\ P(Ia(ni, l_n) \square \rightarrow Q(a, l_m)) \times P(A(i, l_m)) & \text{if } 0 \leq P(Q(a, l_m)) < 1 \end{cases} \quad [5]$$

A final refinement can now complete the analysis. In most cases, a is not informed that ni is available. Rather, a may only be informed that ni *might* be available. So, instead of analysing the probability that a would ask q about d in c at l_m if a were informed that new information ni is available about d at l_n , one should consider, more realistically, the case in which a is informed that there is a probability $P > 0$ that there might be new information ni about d at l_n , that is, $P(IaP(ni, l_n) \rightarrow Q(a, l_m))$. Note the scope of the two probabilities: the formula should not be interpreted as a problematic case of second order probability (Gaifman [1988]), as if the counterfactual depended on the probability of the probability of a being informed. It is actually a who is informed about the probability of ni . The revised formula, with the usual simplifications, is:

$$R(i) = \begin{cases} P(A(i, l_m)) & \text{if } P(Q(a, l_m)) = 1 \\ P(IaP(ni, l_n) \square \rightarrow Q(a, l_m)) \times P(A(i, l_m)) & \text{if } 0 \leq P(Q(a, l_m)) < 1 \end{cases} \quad [6]$$

[6] synthesises the subjectivist interpretation of epistemic relevance.

7. Advantages of the metatheoretical revision

The availability of new information about d , retrievable at a higher LoA, is like a sealed envelope for a : a is informed that new information is available inside it, but does not hold the specific informational content (compare this to the message “you have mail” sent by an email client). In this way, no version of *Meno’s paradox* arises and one can also account for the prima facie obligation that collaborative or informee-friendly informers may have towards a . The trite answer “I didn’t tell you because you didn’t ask”, offered when someone fails to provide some epistemically relevant information, is now easily shown to be disingenuous. For either a should be assumed to be in a standing state of querying about (i.e., as being interested in) i , in which case the informer has a prima facie obligation to provide a with i even if a did not explicitly ask for it. Imagine the case in which Peter, a friend of Mary’s, knows that she has lost her job, but that she has not yet been informed about this. It would be safe to assume Mary to be in a standing state of querying about such piece of information, so Peter, as a collaborative informer, has a prima facie obligation to inform her. Or a may simply be assumed to be reasonable enough to ask the appropriate question to obtain i , if provided with sufficient metainformation about the availability of i . In which case, the informer may have the prima facie obligation to provide at least enough metainformation about the availability of new information. Peter has at least the prima facie obligation to tell Mary that something might have happened regarding her job. Either way, not being explicitly asked by the informee fails to be a proper justification for the (informee-friendly) informer’s silence.

A last, important advantage to be highlighted is that [6] is easily translatable into a Bayesian network, which then facilitates the computation of the various variables and subjective probabilities.

To summarise, [6] is easily implementable as a Bayesian Network. It explains why a collaborative informer has a prima facie epistemic obligation to inform a about i , or at least about its availability when the informer does not know what i amounts to, even if the informee does not ask for i . As we shall see in the next section, this is the fundamental assumption behind the juridical concept of relevant information. It is also what may generate conflicts in medical ethics, when epistemically relevant information may or may not be shared with all interested parties.

8. Some illustrative cases

As anticipated, the previous analysis is compatible with a large variety of widespread usages of the concept of relevant information, to which it provides a unified, conceptual foundation. We have just seen the deontological and Bayesian contexts. Three other examples will suffice to illustrate the point and show how the conceptual ingredients found in [6] also occur in the literature on relevance, even if unsystematically.

The idea of interpreting relevant information erotetically was already exploited by Cohen [1994]. It is common in computer science and information science, where relevant information is broadly treated as “information whose subject matter matches that of a query” (Choo et al. [2000]).

The connection between relevance, probability and counterfactual inference is drawn, although not too clearly, in jurisprudence. For example, the *U.S. Federal Rules of Evidence 401. Article IV. Relevancy and its limits* states that “‘Relevant evidence’ means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence.” Essentially, the law of evidence treats epistemic relevance as a relation between an informee a and two pieces of information p and q , such that it renders p (e.g. information about the involvement of an agent in a crime) more probable to a because of the occurrence of q (e.g. information about the time and location of an agent when the crime was perpetrated) either by itself, or in connection with other pieces of information (e.g. information about means of transportation).

Finally, in pragmatics, relevance theory (Sperber and Wilson [1995]) states that “In relevance-theoretic terms, an input is relevant to an individual when its processing in a context of available assumptions yields a positive cognitive effect. A positive cognitive effect is a worthwhile difference to the individual’s representation of the world – a true conclusion, for example. *False conclusions are not worth having* (emphasis added). [...] Intuitively, relevance is not just an all-or-none matter but a matter of degree. [...] Thus, relevance may be assessed in terms of cognitive effects and processing effort:

Relevance of an input to an individual

a. other things being equal, the greater the positive cognitive effects achieved by processing an input, the greater the relevance of the input to the individual at that time.

b. other things being equal, the greater the processing effort expended, the lower the relevance of the input to the individual at that time.” (Wilson and Sperber [2004], p. 608).

Although “relevance” is used in relevance theory as a technical term,¹² it is easy to see how several elements in the previous quotation can also be found included in [6], especially the informee-oriented, context-based, query-driven nature of relevance. The improvements encapsulated in [6] are threefold:

1. semantic information (not just some linguistic item) is explicitly identified as the relevance-bearer;
2. point (a) above is still assumed but it is now translated into *a*’s (counterfactual) interest in asking *q* to obtain *i*, expressed by *a*’s query. This translation no longer requires the problematic specification of what may count as “positive cognitive effects”;
3. point (b) above is replaced by degrees of probability of obtaining *i*, since [6] entirely decouples the degree of epistemic relevance of *i* from the degree of cognitive (or computational) obtainability of *i*. It seems counterintuitive to assume that “the greater the processing effort expended, the lower the relevance of the input to the individual at that time”. Indeed, if it weren’t for the technical use of “relevance” stressed above, one might argue exactly the opposite: *ceteris paribus*, some times it is precisely those bits of information more difficult to obtain (access, process etc.) that are the most epistemically relevant.¹³

A fundamental consequence of both the pragmatic approach (see the quotation above) and the subjectivist interpretation (see [6]) is that false semantic content fails to be relevant at all (for a different view see Dodig-Crnkovic [2006]). This is the next point to be discussed.

9. Misinformation cannot be relevant

It is easy to be confused about both “relevance” and “misinformation”. Regarding the former, we now have a clear analysis; regarding the latter, elsewhere (Floridi [2005b]) I have shown that misinformation is “well-formed and meaningful data (i.e. semantic content) that is false”.¹⁴ If we analyse epistemic relevance in terms of cognitive efforts, clearly misinfor-

mation makes no worthwhile difference to the informee/agent's representation of the world. On the contrary, it is actually deleterious. If the train leaves at 13.15, being told that it leaves at 14.25 is a nuisance to say the least. Likewise, if we endorse [6], clearly no rational informee/agent would be interested in receiving some misinformation as an answer to her query.¹⁵ That one might not know whether the answer counts as information is an entirely different problem, one that involves trust, the reliability of both sources and methods of information processing and of course sceptical issues. That misinformation may turn out to be useful in some serendipitous way is also a red herring. False (counterfeit) banknotes may be used to buy some goods, but they would not, for this reason, qualify as legal tender. Likewise, astrological data may, accidentally, lead to a scientific discovery but they are not, for this reason, epistemically relevant information. Of course, there are many ways in which misinformation may be indirectly, inferentially or metatheoretically relevant, yet this is not what is in question here. The student who answers "Napoleon" to the question "who fought at Thermopylae?" has said something false and hence uninformative and *a fortiori* epistemically irrelevant to someone who asked the question in order to be informed about the battle, although his answer is informative about, and hence might be epistemically relevant to someone interested in assessing, the student's historical education. It is because of this distinction that the domain, context and the level of abstraction at which one is evaluating epistemic relevance need to be kept clear and fixed in the course of the analysis. If they are not, the outcome is conceptual carnage.

In the end, the previous discussion shows that we are on the right track. The pragmatic and the subjectivist interpretation of what may count as communicationally or epistemically relevant semantic information coherently converge on the same conclusion, even if they come from different perspectives: had *a* known that *i* was actually a piece of misinformation she would not have asked *q* in order to obtain *i* in the first place. Misinformation is not worth the effort, according to the pragmatic theory. It is unworthy of a rational agent's interest, according to the subjectivist interpretation. These are two sides of the same coin.

10. Conclusion

Agents require a constant flow and a high level of processing of relevant information in order to interact successfully among themselves and with the environment in which they are embedded. Standard theories of information are silent on the nature of relevant semantic information. In this paper, a subjectivist interpretation of relevance has been developed and defended. It is based on a counterfactual and metatheoretical analysis of the degree of relevance of (some semantic information) i to a rational informee/agent a as a function of the accuracy of i understood as an answer to a question q , given the probability that q might be asked by a . The interpretation, synthesised in [6], vindicates the strongly semantic theory of information, according to which semantic information encapsulates truth. It has been shown to be able to account satisfactorily for several important applications and interpretations of the concept of relevant information. Finally, the interpretation provides the missing foundation for a general theory of relevance. It constitutes the hub for several other theories of relevance already developed in the literature. And it is a hub that can be easily expanded by other modules. Two are worth stressing in this conclusion. First, [6] is easily combined with theories of belief upgrade. This is crucial, since the latter can explain how degrees of relevance may be dynamically upgraded following the evolution of a 's background information and beliefs and feedback loops. Second, [6] is perfectly compatible with subjectivist interpretations of probability and Bayesian learning. Clearly these are implications and applications that will be worth developing.¹⁶

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Notes

1. For an overview see Bremer and Cohnitz [2004] and Floridi [2004a].
2. The problem is accurately described in Crestani et al. [1998].
3. "A specific 'entity' (such as an action, training sample, attribute, background proposition, or inference step) is irrelevant to a task in some context if the appropriate response to the task does not change by an unacceptable [sic] amount if we change the entity in that context. Otherwise, we view that entity as (somewhat) relevant to the task. This view is explicitly stated in the paper by Galles and Pearl, which deals with causality and where a perturbation corresponds to a material change in the physical world." Subramanian et al. [1997], p. 2.
4. The adequacy of the Körner criterion of relevance for propositional logic has been proved by Schroder [1992].
5. The analysis of relevance also depends on the level of abstraction (Floridi and Sanders [2004]) at which the process of assessment is conducted. A level of abstraction may be seen as the precise specification of the way in which some information is being accessed and processed, cf. the analysis of "the point of view" according to which something is relevant in Cohen [1994].
6. A question Q is loaded if the respondent is committed to (some part of) the presupposition of Q (Walton [1991], 340) e.g. "how many times did you kiss Mary?" which presupposes that you did kiss Mary at least once.
7. Two further consequences are that (i) rational agents cannot possess exactly the same information and agree to disagree about the probability of some past or future events. In fact, they must independently come to the same conclusion, and (ii) they cannot surprise each other informationally.
8. Bowles [1990] follows a similar strategy to explain probabilistically the relation of relevance in propositional inferences.

9. *Accuracy* is the degree of conformity of a measure or calculated parameter to its actual (true) value. *Precision* (also called *reproducibility* or *repeatability*) is the degree to which further measurements or calculations show the same or similar results.
10. Plato, *Meno* 80d-81a.
11. This solution is partly adopted in information theory by Tishby et al. [1999], who “define the relevant information in a signal $x \in X$ as being the information that this signal provides about another signal $y \in Y$. Examples include the information that face images provide about the names of the people portrayed, or the information that speech sounds provide about the words spoken.” Note that what they treat as “relevance” is really a quantitative relation of structural conjunction, which can be considered a necessary condition for semantic relevance, but should not be confused with it.
12. “Relevance here is a technical term (though clearly related to the natural language homonym), whereby an interpretation is relevant only in cases where the cognitive cost of processing the event which demands the attention of the agent is outweighed by the cognitive benefits of that processing (where benefits include deriving or strengthening new assumptions, and confirming or rejecting previous assumptions). ‘Optimal relevance’ states that the first interpretation which crosses the relevance threshold is the right one; that is, that the first relevant interpretation the addressee arrives at is the one the speaker intended to communicate.” (Emma Borg, *Intention-Based Semantics*, in Lepore and Smith [2006], p. 255).
13. Ziv [1988] has argued that relevance theory needs to be supplemented by a theory of rationality of causal relations, in other words, what in this paper has been called causal relevance (following Hitchcock [1992]) and the assumption of a rational agent.
14. “Disinformation” is misinformation purposefully conveyed to mislead the receiver into believing that it is information.
15. This is consistent with the truth requirement established in Cohen [1994].
16. I am grateful to the organisers of the 30th Wittgenstein Symposium, especially Herbert Hrachovec and Alois Pichler, and to the participants to the meeting, especially Fred Dretske, for the opportunity to discuss the contents of this paper and for their feedback during the presentation. The reader interested in the topic may wish to know that a much longer, more detailed and slightly more technical version of this paper is forthcoming in *Erkenntnis*.

Computability of Reality as an Unfulfilled Dream

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I Introduction

(1) Cyber-ontology¹

Ontologies are now said to be an important technology for the Semantic Web, even indispensable for facilitating the current Web2. Such ontologies can be called “information systems ontology” in contrast to “philosophical ontology” (Smith&Welthy 2001, iv). Here I employ the name of “cyber-ontology” in order to emphasize this contrast.²

In information science, databases have been developed in quite different areas, for example, in law, medicine, commerce, genetics, geometry, or various kinds of archives like historical material, architecture, cultural heritage, everyday commodities like apparel, foods, cars and so forth. Although any kind of database appears to be represented by its own ontology, there has yet been no unification of ontologies. A semantic web construction should be required to integrate such a huge chaotic congregation of databases for general usage. The system should support new programs, for instance the ontologies alignments programs, or it would need to be provided with expanded and deepened ontologies in order to manage with such enormous strata of databases. Recently, in fact, within the development of a merging technology of ontologies, “large real life ontologies” are called for because “they are necessary for better evaluations” of ontology alignments (Lambrix and Tan 2007, 199).

Just as in the history of their growth, the practical and social demands of information science for their more general usage, system integration, interoperability and so on make the cyber-ontologists “look beyond the artefacts of computation and information to the big wide world”. (Smith & Welty 2001, vi).

Leaving aside the question of what kind of benefits from the theories of philosophical ontology the cyber-ontologists enjoy or will be able to enjoy, it seems to be important that the information systems ontology is featured as “an enormous new field of practical application that is crying out to be explored by the methods of rigorous philosophy” (Smith & Welty 2001, vii)

(2) Unfulfilled dreams

Probably anyone who is currently engaged in the knowledge technologies or ontology engineering could scarcely be expected to accomplish a perfect reconstruction of reality itself. A perfect computability of reality might still remain a dream for cyber-ontologists at present even from a technical point of view. However, where there emerges an idea to build a common world ontology that may serve the Semantic Web, it becomes a pressing demand rather than just a dream.

The history of the theory of knowledge in philosophy tells us that to attain a perfect foundation for knowledge or absolutely transparent structure of human consciousness of intellectual activities that culminates into “the ideal of total clarity” or “the ultimate intelligibility”, is an unfulfilled dream of philosophy in a sense. Without exploring the structure of knowledge or our knowledge of the world we live in by analyzing at least our consciousness or linguistic activities, we might be unable to acquire the perfect list of entities in the world with their properties and relations, or to search a transparent mechanism of our knowledge-based activities.

Also, if cyber-ontologists intend to capture all the entities and events with their properties and relations into their databases, they should primarily have the entities and events as their objects and rewrite them into formal languages in order to control them. Computability of reality, in short, fundamentally depends on how far we can attain the “ultimate intelligibility” of reality and our experience of it. It then seems to be suspicious that cyber-ontologists might not share such philosophical dreams as I just mentioned.

But what are the issues to be discussed here, if not technical ones? (Technical problems shall be solved technically, for instance as in a technology of merging ontologies.)

First, as to the computability, there are questions about language and objectification from a philosophical point of view.

Secondly, with regards to the dream, we must take a glance at the question of whether the knowledge of “knowing how” could thoroughly be converted into the “knowing that”. By means of the objectification, if all our “knowing how” to cope with things could be converted into “knowing that” knowledge, a highly facilitated “large real life ontology” could be built as cyber-ontologists dreamed (Lambrix and Tan 2007, *ibid.*).

Without question, a total conversion is unthinkable because of our limited capacity. Cyber-ontologists appear to lose plausibility at the beginning. Is it really so? Hopes and dangers may both grow out of this gap between dreams and our limited capacity. Here the question of what would remain uncontrollable that makes the dreams remain unfulfilled at the start is left for philosophical discussions.

II Collaboration

(1) Cyber-ontology and philosophy

Taxonomy and epistemological conceptualization seemed to be the primary concern of the information scientists who wanted to look into philosophical tradition. Taxonomies with relations between objects and restrictions to control possible relations might well grow into an information systems ontology. In this respect, for them the point of the collaboration of information technology with philosophy turns out to be the question of how philosophy can be useful for the information systems ontologies.

J.F. Sowa already in 1984 presented knowledge-based systems, elaborating the graph technique of conceptualization of ordinary language in order to formalize its general, practical aspects. His book proved to be one of those of epochal importance in the meaning-oriented development of knowledge engineering that resulted in an ensuing growth of information ontologies. He aimed to give ontology of “not all the things that exist in the real world, but of the entire thing that may be imagined in the mind”, i.e. “a catalogue of modes of existence” (Sowa 1984, 173,361). His ways of consulting philosophical insights were not ad hoc, but systematically developed from Aristotle to the twentieth century’s philosophy, naturally with inclination towards analytic, linguistic and logical theories. In this context, for example, he several times referred to Wittgenstein’s concepts of “family

resemblance” or “language game” as useful in defining the meaning of a concept as the set of all its possible use (ibid. 15-17).

Even in recent investigations, Husserl is quoted particularly with regards to his logical theory of the relationship of part to whole, a mereology (Saito 2006; Mizoguchi 2004; McGuinness 2003, 183).³ Cyber-ontologists here in a sense appear to share a philosophical dream to attain the total clarity of knowledge construction with philosophers like Husserl.

As we have just mentioned, taxonomies from philosophical ontology, or inference theories from Logic, or some significant phases of philosophy of language, or any forms of logical semantics may well benefit cyber-ontologists. The trends would become the clearer, the more the information ontology techniques are pressed for improvements in order to provide us with an amenity of Web life.

(2) The basics of the issue

These days, collaborations appear to be promising and an inclination to utilize the fruits of philosophical ontology dominates the knowledge engineering fields. But it is not only to study our forerunners’ works, and we should go back to the basics of the question of computability of reality. Then we could handle the real issues concerning cyber-ontology.

At a glance, the question of computability of reality may be a question of language by means of which the description of the events and entities in the universe is possible. It appears to be the question of to what extent we can rewrite all the linguistic representations of the objects available for machine readable languages (the question of formalization) and what the relationships between such computable languages and natural language (the question of language processing) are, together with that of whether natural language could exhaust our way of life in principle. Any representation of the objects presupposes our linguistic as well as cognitive abilities.

Each of these issues is to be discussed for their own sake. But the fundamental matter for ontology is to solve the question of what there is or what is given to us as objects.

Thus, the more fundamental and essential problem here is that of objectification of entities with their features, events and relations in the world. Specifically, it is the question of whether anything capable of being manipulated by us could really be explicitly objectified. The question is answered

negatively. This is because our language use and manipulation of things are not only limited, but also only possible against the background of vast implicit meaning strata.

Particularly in the field of information science, all the efforts of objectification of what existed in the world aim to transform them into our resources. Although those efforts would banish ambiguous elements for the sake of explicit manifestations in order to construct a relatively closed semantic network, such cognitive deliberations themselves depend upon the implicit background of meaning full of obscurities with unarticulated existential situations.

III Differences

(1) The difference in attitude

In fact, philosophers like Wittgenstein or Husserl went on to penetrate into what was not explicitly articulated and tried to show it as an ineffable ground.⁴ Wittgenstein revealed the ground of certainty. Husserl elucidated fundamental passive layers that underlie our perceptual as well as cognitive experience of objects. In this sense Husserl's theory of constitution and meaning (of objects) involves ontology. Here we should realize a crucial difference of attitudes between cyber-ontology and philosophical thinking. Philosophical thinking penetrates into what were implicitly presupposed and what were mostly forgotten in our everyday cognitive or linguistic activities. Cyber-ontology consciously or unconsciously remains indifferent to these implicit strata. Or it can be said that in principle information science depends solely upon explicit representations.

There might be many philosophical ways to deal with these problems. Among them, phenomenological approaches have been often and profoundly tackling these topics as their recurring themes. But, Heidegger's thoroughgoing criticism of technology appears to provide us with ever more fundamental and clearer perspectives to see the issue of objectification for today's complicated information world we now inhabit.

(2) The difference of approaches

There is a great difference in attitudes between information scientists and philosophers as mentioned above. They, however, partly share the approaches to the objects when they start from what is explicitly given to the mind.

Husserl's method to analyze the objectification is philosophically subjective and idealistic. But primordial passive strata or implicit background of our objectifying acts are apt to escape from any kind of subjective analysis and refuse explicit, verbal representations. To consult Heidegger's criticisms of technology means rather a decisive changeover of approach from the subjective looking (objectifying acts) into what are given to the mind to the listening to "Dasein" (being-there).

This is because it gives us, by its selfless "Hören", the understanding of what is hidden from our eyes and where the urgent philosophical problems concerning information technique are. It also seems to make us face the real danger of modern technology that resides in our unawareness of the existential disembodiment (Hillis 1999, 235) when we become accustomed to this powerful tool.

(3) "Dasein" and "equipmental whole"

Dreyfus gave a detailed and lucid description of "an equipmental whole (the totality of equipment)" in which "Dasein" dwells (Dreyfus 2006, 34-41). According to his interpretation, "Dasein" as "Being-in-the-world" is "transparently" coping with the things that belong to "an equipmental whole" (ibid.), i.e. equipment in the broadest sense to include anything useful, like tools, dwellings and so on. We encounter with those things as "readiness-to-hand", for example, equipment for writing (*Schreibzeug*) which is "always in terms of its belonging to other equipment: ink-stand, pen, ink, paper, blotting paper, table, lamp, furniture, windows, doors, room" (SZ 68f.). These things are placed within the constellation of the equipmental context. This state of "Dasein" is characterized by "an absorption in the world" in the manner that we dwell within such equipmental context and would not explicitly thematize or even be aware of it unless a piece of equipment is missing or breaks down.

To objectify a piece of equipment means to isolate it out of its context of the whole network and its formalization implies a sort of disembodiment, uprooting it from the background that makes it alive. Our coping with the things we encounter in our world is our “knowing how” to live in our ordinary world of equipmental whole. The concept of “knowing how” indicates this state of “Dasein” that knows how to cope with things around it fundamentally naturally. The concept of “knowing that” on the other hand implies the objectifying acts of something as its knowledge or resources.

(4) VR as an objectification

In contrast to the Dasein’s absorption in the world, theoretical observation of the world would be objectifying whatever is relevant to the theory, isolating of names, concepts, properties of entities, relations between concepts from the totality of equipment and make them all into building blocks of theory. Intelligent space of a knowledge-based Semantic Web also requires such building blocks as concepts, instances, types of relations and axioms as the components of ontologies (Lambrix and Tan 2007, 184). Furthermore, those ontologies would be unified by means of the alignment techniques in order to attain an approximate ‘real life’ ontology. The theoretical objectification at issue here leads us into the undesirable situation.

Since “Dasein” is an inseparable single unity of “self and world”, objectification of things, their properties, concepts, relations and so on would imply converting our coping with things into “knowing that”. The transformation of our coping skills from “knowing how” to “knowing that” means not merely to isolate them from their background but also to reduce them to flat knowledge i.e. disembodiment. While we enjoy the highly facilitated amenity of Web life, we could be almost unconsciously deprived of our natural sense of spacio-temporal distance within tele-interactions (Dreyfus 2001, 60). While we are immersed in virtual reality (VR), we could easily forget how to cope with real things in our primary world. We might be unaware of how far we trespassed upon our natural sense of dwelling within the external anchored world. I think real danger lies in this unconscious situation and our forgetfulness.

Here we would face a danger of which Heidegger warned us about decades ago.

IV Dangers

The concept of “Ge-stell”⁵ would help us to understand this danger. In the first place, according to Heidegger's criticism, the “Ge-stell” is the essence of modern technology (VA 26).

This celebrated concept from “The question concerning technology” (*Frage nach Technik*) sometimes bewilders us. Not only does it frequently occur in Heidegger's phrases of sharp criticism against modern technology, it is also employed to explain modern technology to be our destiny and suggests the time of salvation that comes to us in the very center of the crisis caused by technology.

In my interpretation of the concept, “Ge-stell”, there is something that hinders us from seeing our primordial relation to the truth, as our primordial way of being. It may be a driving force imposed upon us to go on developing further and further, exploiting nature and earth, transforming them into our resources (by objectifying them), and at the same time disfiguring ourselves also into resources.

It is our inherent inclination rooted deep in us as cultural being and having intelligent existence. While we remain unaware of these, it won't cease to be our destiny that is inevitable. It might deprive things, human beings, or natural beings, of their “dignity” and their own existential significance. Therefore it can be called “the violence of modern technology” (Young 2002, 44).

However, technology itself is not the danger at all. “The Ge-stell”, “the essence of technology, as a destining of revealing” turns out to be the danger (VA 29, English trans. 333). In my view, as we are destined to develop modern technology by revealing Nature, it would be our responsibility to understand that we are apt to forget about such destiny and about how far we have gone beyond our primary world by means of theoretical objectification as in the case of our investigation of cyber-ontology here. Creating a cyber-space is not itself a danger, but that we would easily become unaware of the disembodiment of VR. The real crisis of disembodiment in VR does not lie in the VR technology itself or in information systems ontologies themselves, but in the “Ge-stell”, our inclinations that drive us to achieve it indifferently to our natural sense of existence (existential anchors)⁶.

We are inclined not to listen to what is heard, but to cling to what we explicitly see and what we constructed even if they are fake rather than the given basis upon which all our constructions are possible. Cyber-evolution

is still halfway to the actualization of the dreams of human intellectual subjectivity but it represents an integration of the enormous fields of our “knowing that” originated in the history of philosophy.

Philosophy may help the information systems ontology. Furthermore it may be useful particularly in constructing real life ontologies, serving them with logical formation techniques and conceptual analysis or even with incremented insights in semantics and pragmatics etc. However, in my view, these might well be important but not yet authentic tasks for philosophy. It seems to be the authentic tasks for philosophy to continue to question the meaning of the cyber techniques for us and then to scrutinize the essence of technology and its danger we face as well as the salvation we long for.

V Conclusion

(1) On the computability

One of meanings of discussing the computability of reality is to reveal what was forgotten from any explicit conscious reconstruction of reality in a cyber space. Oversimplification aside, in some sense, all cyber technologies are reduced to mere operations on symbols acquired by means of digital objectification that entirely depends on explicit representations.

Another would reside in the following matters. Possible collaborations with philosophy in the fields of cyber-ontology might have been shown, with a shared unfulfilled dream of a perfect reconstruction of reality or the ultimate intelligibility on the one hand, but there emerged fundamental differences between them on the other. Here we could find authentic philosophical tasks.

One of the tasks would be to continue questioning the meaning of the forgotten existential relationships with things within the primary world or about the significance of natural sense of distance that tele-interactions have extinguished. These forgotten implicit strata could not be visible in principle to the eyes of cyber-technologists, still they are the basis for our existence, as an anchor. Heidegger would warn us of the danger that we might well forget how to cope with the real things with flat knowledge. He advises us to hear not what is expressed in the utterance but “unintelligible words and not a multiplicity of tone-data” (SZ 163f.) (from what we are

existentially anchored in). Heidegger suggests in his message that salvation comes from our “questioning” (VA 36). “We look into the danger and see the growth of the saving power” (ibid. 34).

(2) The task of philosophy

Another task turns out to be to find the road to salvation. What is the danger of the cyber-world as a result? It might be caused by the replacement of absorption in the primary world with the immersion into the virtual reality like the amenity of current Web2 from time to time. An entire replacement is apparently impossible. But partly we may consciously or unconsciously replace our sense of dwelling in the world with the feeling of amenity in the virtual world.

In this connection, alternative world disorder, ADW (Heim 1998, Chapt. 7)⁷, may well take the form of an intellectual disease of communication disorder caused by those replacements.

Although a new kind of ADW has not yet shown up as a serious disease precisely identified, the crisis looms large whenever we forget our existential anchor and cease to question the meaning of our own intellectual development.⁸

If we could hear the voice from our own existential situations (“Dasein” in a “selfless” mode), we might be free from our destiny and face the danger. I hope it proves to be a kind of salvation, though I am not sure about it

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Notes

1. In the following, I will employ "cyber-ontology" instead of "information systems ontology" wherever philosophical issues come to the fore.
2. Ref. Zúñiga, 2001, 189. It is the question of what philosophical ontology can add to information ontology.
3. Husserl's investigations into the theory of part-whole relations (mereology) in his *Logical Investigations* (Husserl 1968) could be reinterpreted not only in the broader context of modern ontology (for example in the context of "the trope theory" in metaphysics) but also from the perspective of information systems ontology. Ref. Simons P. 1994; Fine, K 1995; Campbell, K.1981. Though this topic attracts us even in our rough sketch of philosophical thinking, it has to be revealed from its own vistas of research and requires further elaborations and discussions.
4. For instance, there are celebrated concepts which Wittgenstein elaborated on the theory of meaning and radical investigations into pre-linguistic strata which later Husserl revealed especially in his last two decades. Not to mention the concepts of "forms of life" or "world-picture" which are said to be deeper than language-games (OC sec. 94, 167, 204), Wittgenstein also talked about some sorts of pre-linguistic primitive behavior on which language games were based (Z sec. 541). As for Husserl, I should at least like to refer to

his notion of “genetic logic” in the context of the analysis of passivity in his APS that resulted in the studies on fundamental ground of pre-predicative meaning (APS Part 1, Appendix B, etc.; EU Part I). But, there always remain issues around these concepts left for future discussions.

5. I employ this word instead of the standard English alternative “emframing” in order to make its connotation clearer.
6. The anchor here represents partly the fact that any forms of Internet technology must “depend on the integrated, place-bound character of our involvement in the world” (Malpas 2001, 118).
7. In fact, Heim’s AWD (Heim 1998, Chapt. 7) appears to be no larger a threat to us, because simulations and huge machinery facilitated for VR art that were considered to cause AWD could not pervade our everyday life. Within the ordinary everyday life world we encounter them just as obtruded special spots for entertainment or mechanical training. They seemingly handed over their banner of cyber-evolution to the Internet.
8. In this connection, I refer to the questionnaire entitled “Are you a portable phone addict?” (the title could also have been “On digital interactions”) in a Japanese newspaper in January 2007. The number of students questioned was 131, mainly from the age of 18 to 24 and only a few were over thirty. Students answered 5 questions with their own free remarks, as many as they liked, but within less than 15 minutes. The time-limit was set to ensure candid opinions. The relevant parts of the results are the following. The answers are sorted into typical remarks (figures represent the number of answers).

- (1) “What do you think of the difference between digital and analog dialogue?”
 - Analog: has actual voice and expressions on face and looks. 88 (88/131 67%)
 - Digital: is a superficial world with mere machine letters, 29 (22%)
 - or a fake world without real coherence. 10 (8%)
 - Digital: one has the advantage to keyboard anything without hesitation. 26 (20%)
 - Digital: It is easy to pretend or disguise the feeling in digital communications. 15 (11.5%)

- (2) “How can you characterize the reality of dialogues?”
 - face to face (understanding of the feelings from the expressions, voice, and behavior). 123 (94%)
 - with the feeling of existence. 14 (11%)
 - within situations to be able to know the others’ real intentions. 13 (10%)

- (3) “What do you think of the characteristics of the digital relationships?”

Negative remarks:

- They are superficial and fragile. 53 (40%)
- There is no sincerity by digital mails. 26 (20%)
- It is a fake world without real coherence. 18 (14%)

Affirmative remarks:

- It is an advantage to keyboard use without hesitation. 10 (8%)
- It is easy to pretend or disguise feelings. 37 (28%)
- Other comments: they are out of normal orders without normal contexts.

The majority of answers were negative remarks, although all the students use portable phones frequently. It can be said that they engage in digital interaction so

often that they realize its deficiency intimately. They find deficiencies mainly in the mental aspects of digital interaction rather than in its practical achievements. Their remarks may mean that they dwell within the real world and maintain their sense of existence. But the danger emerges that the digital world comes to surpass gradually the real world through its social effectiveness.

PhiloSURFical: Browse Wittgenstein's World with the Semantic Web

MICHELE PASIN & ENRICO MOTTA, MILTON KEYNES

1. Vision: a Semantic Web *for* philosophers?

How could a web navigation enlighten or affect a philosophy scholar? Especially within an educational scenario, is the constantly increasing number of philosophical web materials a source of confusion, or an advantage? In our work we have been investigating the requirements and features of the possible navigation mechanisms a philosophy student could benefit from. In particular, in the context of the Semantic Web (Berners-Lee, Hendler, & Lassila, 2001), we have identified some of the “learning pathways” which can be used for dynamically presenting these materials within a meaningful context.

For example, imagine that from the paragraph 7 of Wittgenstein's *Tractatus*, by selecting an *interpretative* navigation path, you could easily jump to Max Black's detailed commentary on it. And from there, being interested in Black's interpretation and wanting to gather information on its possible origins, you were able to query the web using a *comparative* navigation path, aimed at highlighting what Wittgenstein and Black had in common. Two main results are returned: both studied at Cambridge, both worked in the philosophy of language area. You decide to focus your attention on Cambridge, click on it, select an *historical* perspective and see that while in Cambridge, in the the 20's, Black had the opportunity to listen to and meet some of the major scholars of the time: Russell, Moore and Ramsey were among them. Now you may want to reorganize these results, according to a *theoretical* perspective. Thus you discover that another link among all these philosophers is their interest in the philosophy of mathematics, and that actually Black's first book was centered on this topic. So you drift away for a moment, select again a *theoretical* navigation, pull up a small map of the important views in philosophy of mathematics in the last century, and see that among them there is also the first philosophy of Wittgenstein. You click

on it, select a *textual* navigation and automatically you are taken back to the *Tractatus*, but this time to paragraph 6.2.

The sort of links that would make possible such navigations are of a slightly different nature than the famous hyperlink which, together with other things, made the fortune of the web. And if Google (Beavers, 2005) does a great job in meaningfully organizing for us the web of hyperlinks, it cannot do much if we wanted to query directly the web of relations existing among our world's entities. In order to do so, resources need to be indexed and described not only at the syntactic level (e.g. with respect to their status as an image, a text file or a video), but also at the semantic one, i.e. with respect to their content. The Semantic Web effort, or web of data, brings forward the ambitious vision of creating and maintaining this "semantic layer" of the web, so to allow software agents (e.g. programs like the navigation tool described above) to accomplish various operations which would not be otherwise possible.

Often, with great and inspiring visions, also come great and challenging difficulties. The Semantic Web makes no exception here (Halpin, 2004). During our work with the PhiloSURFical tool we faced many of them, some with an exquisitely philosophical flavour, others of an inherent technical character. In the final section of this article, we will draw the readers' attention to some lessons learned during the construction of the ontology and hopefully show how, despite the various limitations, the benefits of such an approach make the enterprise worth pursuing. In the next section, instead, we will outline the most important functionalities of the PhiloSURFical application (which is available online at <http://philosurfical.open.ac.uk>) showing how they could facilitate and enhance the understanding of the *Tractatus*.

2. The PhiloSURFical tool

2.1 Overview

PhiloSURFical is a pedagogical application which allows the contextual navigation of a semantically-enhanced version of Wittgenstein's *Tractatus Logico-Philosophicus* (Wittgenstein, 1921). By relying on an ontology created to describe the philosophical domain at various levels of abstraction, users can benefit from multiple perspectives on the text and on related resources. For the moment, as the availability of free and adequate semantic

data on the web is still limited, PhiloSURFical strongly relies on an internal knowledge base, but its architecture attempts to be open and extensible so to allow future integration and querying of different repositories, using the appropriate web standards (e.g. RDF (W3C, 2004b), SPARQL (W3C, 2007), OWL (W3C, 2004a)). At the time of writing, the prototype is mainly focused on browsing functionalities. However, in the next version we plan to extend it so that users can also store their own annotations about the *Tractatus* and possibly contribute to the creation of a network of philosophical resources centred around the text and its author.

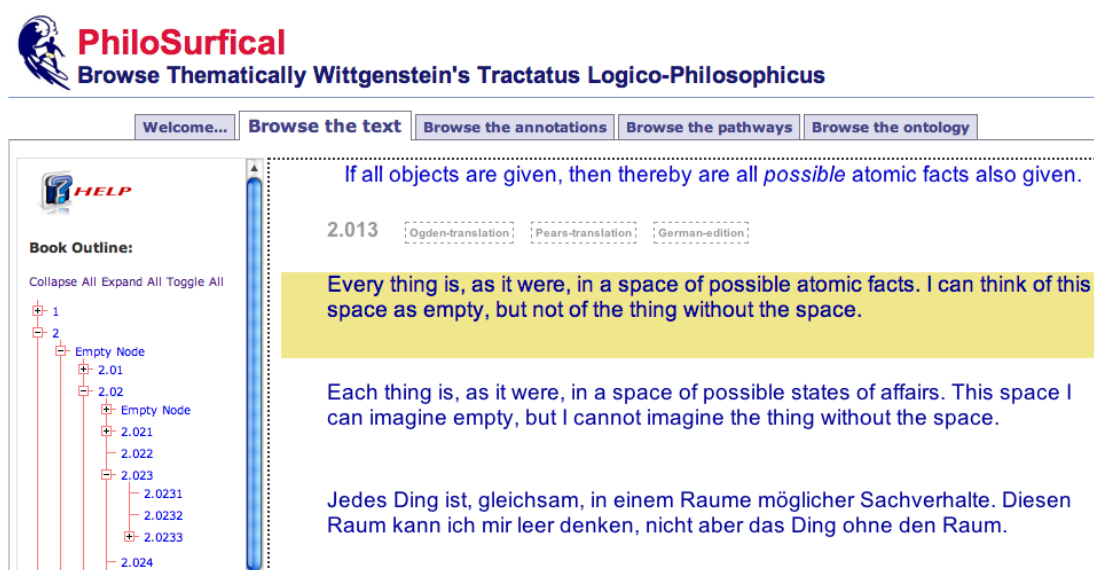


Figure 1. Screenshot of the PhiloSURFical application

The tool is organized into five main sections or *tabs*. In general, we attempted to organize the tabs' sequence according to their increasing difficulty of usage (namely, the first tab requires less 'learning effort' than the second one, the second one than the third one, etc.). By doing so, we wanted users to have a more 'gradual' encounter with the software. This becomes important especially when considering that not all Wittgenstein scholars might be familiar with complex web-based educational tools. The five tabs can be described as follows: the *welcome* tab serves as a splash screen and provides some contextual information and links to relevant resources; the *browse the text* tab presents three versions of the *Tractatus*' text in a simple but highly interactive interface; the *browse the annotations* tab supports a different type of text navigation by means of a smart-index of the topics associated to the *Tractatus*' fragments; the *browse the pathways* tab lets

users select topics of interest and explore related resources by using the “pathways” metaphor; finally, the *browse the ontology* tab visualizes the tree-hierarchy of the ontological representations PhiloSURFical relies on, letting users have a glance at the underlying complexity of the model. In the next section we will now give a more detailed description of the tabs’ functionalities, highlighting for each one of them what are the most salient features and functionalities.

2.2 Tabs’ description

Tab 1 – Welcome

This section does not provide specific functionalities for navigating the *Tractatus*, but it has a fundamental role in giving some information to the (possibly random) user regarding the purpose of the prototype. Moreover, it links to various external learning resources about Semantic Web related topics, which should help users in understanding both the terminology and the functioning of PhiloSURFical.

Tab 2 – Browse the text

In this tab users can simply browse the text, which is made available in three of its ‘versions’ (the original German edition and the two major English translations). In order to facilitate this activity, a tree-like outline of the book on the left hand side lets them jump quickly to a specific paragraph; also, it provides a handy overview of the highly hierarchical *Tractatus*’ structure. Another interesting feature in this tab is a javascript mechanism by which it is possible to select what *Tractatus* version to visualize: when the mouse hovers one of the paragraphs, this is highlighted and a contextual menu appears above the text. By clicking on one of the available options, it is possible to view more than one translation at the same time (as shown in Figure 1, with the proposition 2.013).

Tab 3 – Browse the annotations

This is where the ontological backbone of PhiloSURFical starts becoming more evident. At the centre of the screen users can still read the text, but now four panels, two on the right side and two on the left side, provide alternative ways to engage with the *Tractatus*. We can imagine this functionality as a ‘smart index’ of the text. That is, an index of the subjects that

is dynamically updated depending on what text fragment the user is focusing on. However, in order to understand how this works we should first examine the underlying ontological representations.

Thanks to the PhiloSURFical ontology (see section 3), all the text fragments are represented as *instances of information-objects* (specifically, they are instances of the class *text-fragment*). Each one of them has associated one or more annotations, that is, they have been interpreted by some experts in our team as *being-about* certain topics. At the ontological level, this has been carried out thanks to another class called *information-object-interpretation*, whose instances express the connection between an information object and an idea or topic. By doing so, every text-fragment could have multiple interpretations and each one of them is encoded in a different object which remains separated from the instance expressing the text-fragment itself. So, for example (see figure 2), paragraph 2.1 has been ‘linked’ to the annotation object “picture”. Similarly, other paragraphs have also been associated to this annotation and consequently whenever we click on the topic “picture” we can retrieve all relevant the text fragments.

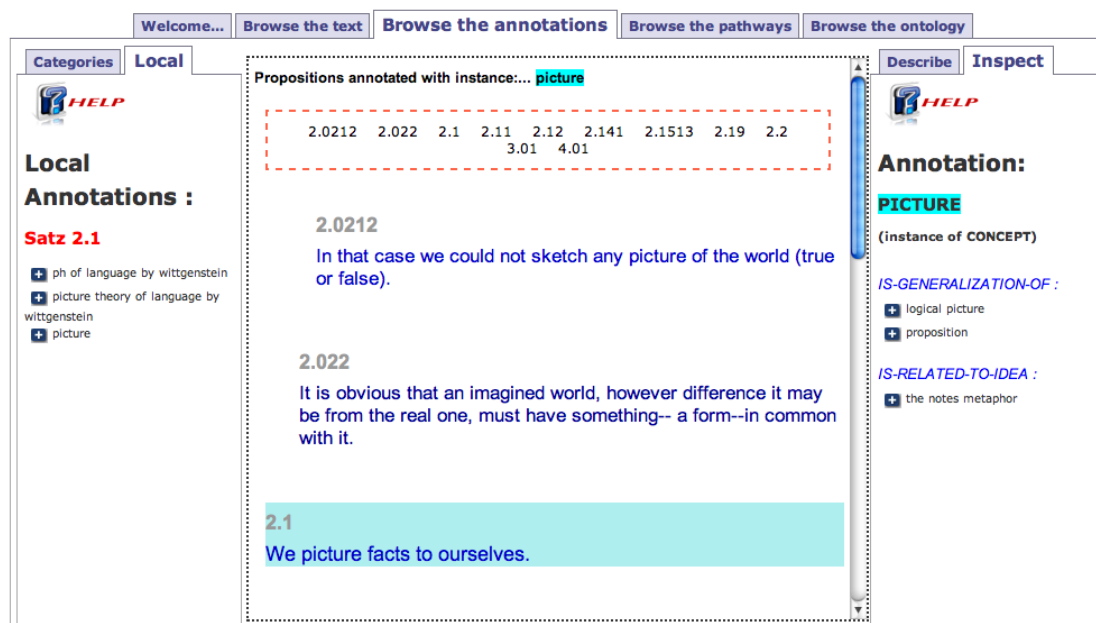


Figure 2. Browsing the text using the annotations' smart-index

This is the first functionality this tab is offering to the user: by selecting a topic, it is possible to see only all the sections of the *Tractatus* that have been associated to it. Also, in the “describe” panel we can read a short

description of the topic just selected. Conversely, by clicking on a paragraph, it is possible to see which are the associated contents (which appear in the “local” panel) and use them for navigating the text in a non-linear manner.

It is important to remember, at this point, that all the *Tractatus* interpretations we created are clearly just *our view* of the text’s meanings. In other words, they are just some possible interpretations which, although we hoped being significant and thus capable of helping learners in understanding the text, could have been done differently and are here primarily as a way to showcase the functionalities of the tool (actually, in future releases, we would like to create an interface that supports users in creating *their own* annotations and possibly also sharing them).

The second functionality provided by the third tab of PhiloSURFical is related to the fact that a certain topic (e.g. in our case, the topic “picture”) is not just a string or an unstructured tag, but is instead an instance of one of the *types of ideas* we classified in the ontology. In particular, it is an instance of the type *concept*¹. Thus, being an instance, it has been created along with several properties (such as name, description, etc.) and it can also be *interpreted* in an analogous manner as the text-fragment interpretation we have seen above (only, this time, this is achieved through a *concept-interpretation* class, which serves for describing a concept-instance using various other properties). For example, the “picture” concept has been interpreted from our experts by using the properties *is-generalization-of* and *is-related-to-idea*, whose values are respectively the concepts of “logical-picture” and “proposition” for the first property, and the rhetorical-figure “the notes metaphor” for the second property. As shown in figure 2, the “inspect” panel displays these interpretations. Also here, users can click on them and thus re-load the text displayed accordingly. The “inspect” panel is updated too and now shows the interpretations of the newly selected topic. This sort of navigation facility can be compared to the usage of a “map” of the *Tractatus* topics for browsing the text’s paragraphs.

Finally, in the “categories” panel it is possible to find all the topics associated with the text, organized into the eight idea-categories defined in the ontology. This panel acts as a general index where users can find quickly the contents they are interested in, or simply browse them to see what is available.

Tab 4 – Browse the pathways

In general, the usage of PhiloSURFical can be framed within the educational activity of learning through discovery of related resources. According to doctrines such as constructivism and situated cognition (Brown, Collins, & Duguid, 1989), this learning style is particularly effective because it pushes students towards the active exploration of a subject and the subsequent discovery of the interlinked nature of all knowledge. By constructing their own “paths” through the available learning materials, students engage directly with a subject matter and are more likely to actively construct a meaning out of it. Thus, the semantic model behind PhiloSURFical has been designed with a clear purpose: the model should support the reconstruction of the history of ideas, by relying on structured information about the practical domain and the theoretical domain of thinkers. Our approach takes the notion of a “learning pathway” as a “system of specially stored and organized narrative elements which the computer retrieves and assembles according to some expressed form of narration” (Brooks, 1996) and attempts to transpose it within the specific scenario made up of philosophical entities.

The screenshot displays the PhiloSURFical web application. At the top, the logo and title "PhiloSURFical" are followed by the subtitle "Browse Thematically Wittgenstein's Tractatus Logico-Philosophicus". Below this is a navigation bar with tabs: "Welcome...", "Browse the text", "Browse the annotations", "Browse the pathways" (which is active), and "Browse the ontology".

The main content area is divided into two columns. The left column, titled "Pathways", contains a "Recent items" section with a "HELP" icon and a search bar. Below this is the "Item in focus:" section, which shows "FRANK-RAMSEY" with a "change" link and an "instance_info" link. Underneath is the "Pathways list" section, which includes a list of pathways with a vertical scrollbar. The selected pathway is "Phd advisors", which is highlighted in blue. The list also includes "Ideas having the same name", "Map of the other related ideas in the Tractatus", "Other documents about the same idea", "Strict string-matching on other resources", "Non-strict string-matching on other resources", "PhD students", and "Scholars born in".

The right column, titled "Results (4)", contains a "HELP" icon and a "[see in a graph]" link. Below this is the "Phd advisors" section, which shows the "Item: Frank Ramsey" and a list of four pathways:

- Frank Ramsey HAD-PHD-ADVISOR ----> Bertrand Russell
- Bertrand Russell HAD-PHD-ADVISOR ----> James Ward
- James Ward HAD-PHD-ADVISOR ----> Hermann Lotze
- Hermann Lotze HAD-PHD-ADVISOR ----> Christian Hermann Weisse Abt.

Figure 3. Example of an historical learning pathway: the PhD-advisors chain

Accordingly, in the fourth tab we attempted to create a virtual environment for building user-triggered “learning pathways”. In more practical terms, users can select a content of interest (or just use the most recently selected content, which is in focus by default) and use it as the starting point of a *semantic* navigation. Once they have selected an item, learners may click on one of the available choices appearing in the ‘pathways list’ panel. Each selectable pathway-type comes also with a brief description explaining its meaning. Once triggered, the pathway’s results are shown on the right panel as a set of interrelated entities. The relations are supposed to highlight the significant connections among the pathway’s items; moreover, when such items are clicked they are automatically put into focus for a new semantic search, so to support a recursive search process. A ‘recent items’ panel is used to keep track of all the selected items since we started, so to be able to put them back into focus simply by clicking on them.

This sort of navigation will usually produce results that go beyond the limited scope of the *Tractatus*: for example, starting from the *view* defined as ‘*Wittgenstein’s picture theory of language*’, a *theoretical-pathway* highlighting the network of rival theories could visualize ‘*Frege’s theory of meaning*’ and ‘*Augustine’s theory of language*’, among others. Instead, if we started from the instance of *person* named ‘*Frank Ramsey*’ (as shown in fig. 3), by using an *historical-pathway* that highlights the chain of PhD advisors we would find out that he is in the lineage originating from C.H.Weisse.

In other words, users here can benefit from a set of ‘query templates’ (which we call learning pathways) so to explore PhiloSURFical’s knowledge-base and other web repositories in a contextual manner. The ‘pathways’ rely on the semantic relations formalized in the ontology and on other ‘semantic mappings’ that link them to other ontologies available in the Semantic Web. However, these pathways cannot be completely open-ended: if they were so, even if they are using the ‘semantic’ links among resources (as opposed to the more usual ‘syntactic’ ones), they would easily reproduce well-known phenomena such as information overload or inconclusive navigations. As a possible solution, we decided to provide users with a series of *semi-structured* ways to query the knowledge base, by constraining them only on *certain types* of semantic relations. Thus, we formalized a number of “generic” learning pathways that represent the most interesting ways to browse the ontology across one of its dimensions (or more than one simultaneously). So, for example, we can have a *theoretical* learning path-

way (which focuses on the contrasting relations among ideas), a *textual* learning pathway (which attempts to retrieve related information objects), a *historical* learning pathway (which keeps results in chronological order) a *geographical* one etc. Of course, the paths can also be specialized: within the theoretical pathway, there can be a *disambiguation* one (which highlights concepts having the same name, but being actually defined by different views), a *contrast* one (which highlights opposing views) etc.

In conclusion, the data from both the local knowledge base and other (previously mapped) information sources can be dynamically reorganized and presented with relevance to the actual context. At the time of writing, the pathways facility is the only functionality in PhiloSURFical which is still under development: this is for both the inherent complexity of its implementation and for the fact that it strongly relies on a large quantity of highly structured philosophical data (which is still not accessible). Nonetheless, we envision that as the emerging Semantic Web makes available a larger number of queriable resources (e.g. the *DBpedia* (Auer & Lehmann, 2007), a structured version of the *Wikipedia*), so the navigation mechanisms will develop with regards to their complexity and interestingness.

Tab 5 – Browse the ontology

This section aims at familiarizing PhiloSURFical's users with the underlying technology the application is using. On the left hand side, by means of a tree-like menu it is possible to navigate the hierarchical structure of the ontology used to represent the *Tractatus* and all the other related resources the tool is presenting. By clicking on the classes' names we can see their description on the right panel: this is composed by some information about their position in the ontology (such as what *super-classes* or *sub-classes* they have), a natural language explanation of the classes' role and significance and a series of *slots* or *properties* linking them to the other classes. In the following section we will give more details about the ontology and its characteristics.

3. Issues in modelling the philosophical domain

As said above, the PhiloSURFical system relies on an ontology. In AI terms, an ontology is often defined as an “explicit specification of a shared conceptualization” (Gruber, 1993) and practically consists of a rich formal

taxonomy augmented with typed relations, quantifiers and rules. The key feature of ontologies, is that computers can *process* it, so to *infer* some new relationships among data. In the context of the Semantic Web, ontologies can be viewed as a sort of “web deduction mechanism”, that is, a reasoning backbone for the web of data. But first of all, ontologies provide a way for guaranteeing the semantic interoperability among different information providers. We do not want here to delve into the many problems involving the ontological representation *capabilities* and *limitations*. It is noteworthy that these problems are possibly increasing when trying to represent philosophical ideas, and the relations among them. Instead, we would like to stress that, as claimed by the authors of a recent project for the indexing of the *Stanford Encyclopedia of Philosophy* “while no single ontology can possibly capture the full richness and interrelatedness of philosophical ideas, we are operating on the principle that having (at least) one ontology is better than none” (Niepert, Buckner, & Allen, 2007).

The specific approach used to realize the PhiloSURFical ontology has at its centre the decision to employ the CIDOC Conceptual Reference Model (Doerr, 2003) as a starting point for our formalizations. The CRM ontology was originally an attempt of the CIDOC Committee of the International Council of Museums (ICOM) to achieve semantic interoperability for museum data. Since 1996, the formal model has improved considerably till becoming in 2006 an ISO standard (version 4.2). The choice of using the CRM was motivated by two reasons. Firstly, for its widely recognized status as a standard for interpreting cultural heritage data. In fact, by reusing and extending an existing and internationally recognized ontology, we will give our tool’s users more chances to benefit from the emerging Semantic Web infrastructure. Secondly, for its extensive event-centred design. This design rationale, in fact, appeared to be appropriate also when trying to organize the history of philosophy: even if it is common to see it as an history of ideas, stressing the importance of the *theoretical* (i.e. meta-historical) dimension, this cannot be examined without an adequate consideration of the *historical* dimension. That is, a history of the events related (directly or indirectly) to these ideas.

for librarians. Finally, a large portion of the PhiloSURFical ontology is constituted by a series of new concepts and relations, mostly aimed at the description of philosophical events and ideas.

We can see with another example how these different formalizations can be used together. As CIDOC is not providing an easy way to model the social and intellectual activities of philosophers, we created various classes for this purpose, which are grouped under *social-activity* and *intellectual-activity*. Within the first group, we have five subclasses: *discussion*, *joining-a-group*, *educational-activity*, *close-social-contact* and *social-gathering*. Partially inspired by some AKT formalizations, these entities have let us extend the already supported event-based kind of reasoning. By instantiating such a model, as shown in figure 5, we can specify that the book by Kimberley Cornish (titled “The Jew of Linz” (Cornish, 1998)) has as subject the fact that Wittgenstein, while studying at the Linz Realschule, had Hitler as one of his young school-fellows. Such a modelling can easily bring to a learning path which intertwines *publications* and *events* in the philosophical world.

Of course, there are many other modelling issues which we could not present here, for space reasons. This is not a surprise, if we just consider the size and complexity of the philosophical domain. In particular, the modelling of concepts regarding ideas and their relations is difficult and mostly overlooked in the literature (Michele Pasin & Motta, 2007). At the moment, the ontology is undergoing a refinement phase thanks to the feedback given by various domain experts, but thanks also to users’ feedback on the narrative pathways PhiloSURFical makes available.

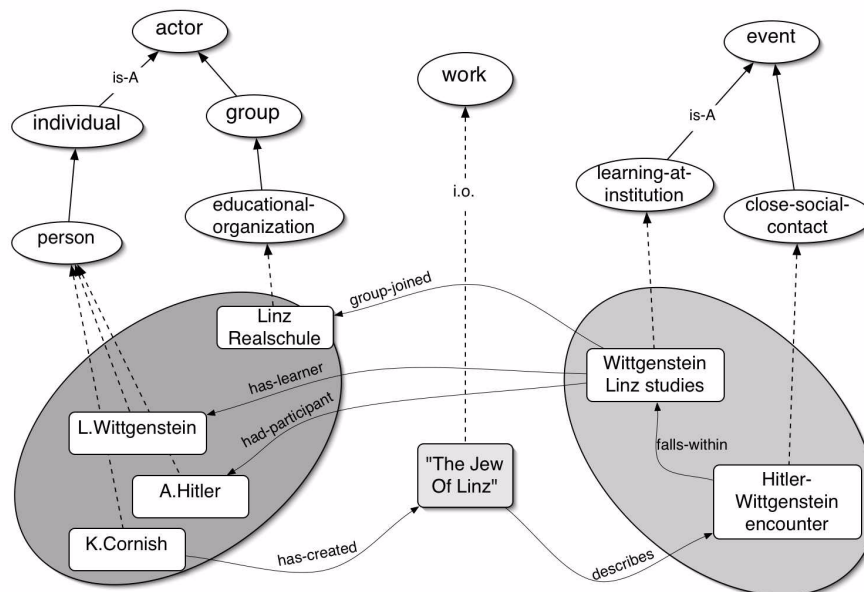


Figure 5. Representing the content of a work through events

Conclusions

In this article we presented PhiloSURFical, a software tool that takes advantage of various Semantic Web technologies to support the learners' task of finding relevant resources. The tool is prototyped with Wittgenstein's *Tractatus Logico-Philosophicus*, one of the most influential philosophical texts of the twentieth century. We have described its operating principles and shown how the ontology it is based on can support various navigation features. As the modelling of a domain such as philosophy is subtle and challenging, we have briefly discussed our approach and provided references to other useful semantic models we integrated. The PhiloSURFical tool and ontology are still in the evaluation phase, but are available online at <http://philosurfical.open.ac.uk>.

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Notes

1. In total, through various analyses we discovered eight idea-types: *problem*, *problem-area*, *view*, *concept*, *argument-structure*, *method*, *distinction* and *rhetorical-figure*. For a more detailed exposition of this, please refer to (Michele Pasin, Motta, & Zdrahal, 2007).

Abstracts and Biographies

*DANIEL APOLLON (Bergen), As We May Be Doing Philosophy:
Informationalism – A New Regime for Philosophy?*

Philosophy and the philosopher have been living under a variety of “regimes”. Some of these regimes are rather abstract and affect the core of philosophical activity. Other regimes predominantly affect the way of expressing and carrying out a philosophical activity. In any case, philosophers have used a limited set of intellectual technologies. The author explores the landscape of post-oral, post-textual regimes of expression and gives a critical appraisal of the paradigm of informationalism, interpreted as “engineerable metaphysics”.

Daniel Apollon (b. 1951) is Associate professor of Humanistic Informatics at the University of Bergen and leader of the Research Group for Text Technology at AKSIS, Unifob, Bergen, Norway. His research interests focus on digital learning, cross-cultural and cross-linguistic aspects in life-long learning, semantic web, autonomous learning and knowledge construction by means of semantic tagging of large document resources. Publications include (together with) Austermühl Frank (ed.), *The Humanities and the Challenge of Elearning*, Bergen – Gernersheim, 2001; (together with) Sánchez-Mesa Martinez, Lambert, J., Van den Branden J., *Cross-cultural and linguistic perspectives on European Open and Distance Learning*, Transcult, Vol. I, Granada, Spain, 1999; (together with) Fure O.B, Svåsand L., (ed.), *Approaching a new millennium, Lessons from the Past, Prospects for the Future*, Proceedings of the the 7th Conference of the International Society for the Study of European Ideas (ISSEI), 14-18th August 2000, Bergen [CD-ROM, 350 papers].

*LUCIANO BAZZOCCHI (Pisa), On Butterfly Feelers: Some Examples
of Surfing on Wittgenstein's Tractatus*

In the only two places where Wittgenstein touches upon the decimal numbers of *Tractatus* propositions, he claims that only those can transform his incomprehensible book into a perspicuous representation. We can now show how this is possible if we interpret them as specifics for a hypertextual implementation. By surfing on the top-down structure of the *Tractatus*

hypertext, we can see (we can feel) the logical form of Wittgenstein's masterpiece, that is, the form of the reality it represents. What pictures and reality then have in common is revealed by a charade hidden inside *Tractatus* propositions – and the differences between two levels of generalization can be seen playing the game 'spot the difference'. Can a picture, in virtue of the connection of its elements, really touch (like butterfly's feelers) reality? And when we go back to the main page, do we really withdraw these feelers? Hypertext exploration has neither a starting nor an end point; although it does have a barycentre, a pulsing heart in the middle: a point of balance (for instance: there is a rule – the rule is not here). Perhaps Wittgenstein's ladder, level by level, does not lead us to "what is higher", but rather, like Escher's ladders, to the basic level to which all the others must be reduced: to what can be said, i.e., to the world.

Luciano Bazzocchi worked for twenty years in computer science and artificial intelligence. In addition to work on Wittgenstein and some technical and epistemological articles, he published a history of artificial intelligence ("Appunti di intelligenza artificiale", in six parts, "Office Automation", 1992).

ANAT BILETZKI (Tel Aviv), Meaning as Use in the Digital Turn

What is the "meaning" of terms, concepts, and ideas now extant in the information society and in digital culture? What theory of meaning can address, in satisfactory manner, the digital turn, which is, fundamentally, a conceptual revolution? This article submits that the only way to make sense of this revolution – and it does insist that it is a *conceptual* revolution – is by harnessing a meaning-as-use theory (with this conscription of "theory" being admittedly un-Wittgensteinian). Furthermore, although it may be unfeasible to formulate a bona fide theory of meaning here, as elsewhere, Wittgensteinian steps can be fruitfully taken in describing novel cultural-linguistic circumstances and situations, thereby elucidating the digital use of terms and concepts. The applicability of "meaning as use" in the digital context will be presented, subsequently, as the best theory of meaning, perhaps the only one, that can address both the promise and the vagaries of digitization.

Anat Biletzki is professor of philosophy at Tel Aviv University. She is author of *Talking Wolves: Thomas Hobbes on the Language of Politics and the Politics of Language* (1997), *(Over)Interpreting Wittgenstein* (2003), and co-editor (with A. Matar) of *The Story of Analytic Philosophy: Plot and Heroes* (1998). Her publications include articles on Wittgenstein, Hobbes, analytic philosophy, political thought, digital culture, and human rights, and she established the graduate program for “Philosophy, Information and Digital Culture” at Tel Aviv. She is deeply involved in the Israeli peace movement and in human rights work; until recently she was chairperson of the board of B’Tselem – the Israeli Information Center for Human Rights in the Occupied Territories.

GREGORY CHAITIN (Yorktown Heights, NY), Irreducible Complexity in Pure Mathematics

By using ideas on complexity and randomness originally suggested by the mathematician-philosopher Gottfried Leibniz in 1686, the modern theory of algorithmic information is able to show that there can never be a “theory of everything” for all of mathematics.

Gregory Chaitin is at the IBM Watson Research Center in New York, and is the discoverer of the remarkable Omega number. His theory of algorithmic information deals with complexity and randomness and develops an idea in Leibniz’s 1686 “Discours de metaphysique.” A non-technical overview of this work, “Meta Maths: The Quest for Omega,” has recently been published by Atlantic Books in London.

JOS DE MUL (Rotterdam), Wittgenstein 2.0: Philosophical Reading and Writing after the Mediatic Turn

One of the crucial claims of media philosophy is that the content of philosophy cannot be abstracted from its mediatic form. According to Nyíri the genesis and direction of Wittgenstein’s later philosophy is connected with the emergence of ‘secondary orality’. Although Nyíri’s claim that form and style of Wittgenstein’s later writings are inherently connected with his cri-

tique of the Platonic culture of the book, is convincing, in this paper, contrary to Nyíri, it is argued that Wittgenstein was not so much on his way back to (a philosophy of) oral culture, but that he was rather struggling his way into a new, post-literate way of thinking and writing. It is argued that an electronic edition of his *Nachlass* is more appropriate to disclose the proto-hypertextual nature of Wittgenstein's thinking. However, as Hrachovec has convincingly shown, the *Bergen Electronic Edition* of Wittgenstein's *Nachlass* is only a half-hearted attempt to do so. Discussing the development of Wittgenstein's conception of the possibility of 'thinking machines' in the light of the development of Web 2.0, it is argued that a mediatic re-reading of the *Tractatus* might not only help us to understand the database ontology that underlies the philosophy of the later Wittgenstein, but also to disclose the *Nachlass* accordingly.

Jos de Mul (* 1956) studied philosophy, art history and law at the universities of Utrecht and Amsterdam. Since 1993 he is Full Professor in Philosophy of Man and Culture at the Faculty of Philosophy, Erasmus University Rotterdam, and scientific director of the Research Institute "Philosophy of Information and Communication Technology" (ICT). Among his book publications are: *Romantic Desire in (Post)Modern Art and Philosophy* (Albany, N.Y.: State University of New York Press, 1999) and *The Tragedy of Finitude. Dilthey's Hermeneutics of Life* (New Haven, Yale University Press, 2004).

FRED DRETSKE (Durham, NC), The Metaphysics of Information

Everybody agrees that information is important. Maybe even necessary. Nonetheless, there isn't much agreement about what it is. Engineers, computer scientists, educators, librarians, newscasters, the CIA and even the neighborhood busybody seek and dispense it. We spend billions on its collection, storage, and retrieval. There is, though, little or no consensus about the nature of this commodity. To merit all this attention – an attention amounting, at times, to obsession – information must be at least three things: (1) It must be a semantic (intentional) entity; it must, that is, be about something; (2) it must be true; there is no false information; and (3) it must be transferable. Anything lacking one or more of these properties isn't information.

Fred Dretske retired from Stanford University in 1998 and has been a research professor (no teaching duties) at Duke University for the last eight years. His books include *Knowledge and the Flow of Information* (1981), *Explaining Behavior* (1988), and *Naturalizing the Mind* (1995). A collection of his essays, *Perception, Knowledge, and Belief*, was published by Cambridge Press in 2000. His current work is on self-knowledge and conscious experience.

*LUCIANO FLORIDI (Hertfordshire/Oxford), A Subjectivist
Interpretation of Relevant Information*

One of the complaints frequently vented about current theories of information is that they are utterly hopeless when it comes to establish the actual relevance of some specific piece of information. Most of the time, most of us are interested in knowing not so much whether something is an instance of information, but rather how much that something is relevant for our purposes. Strictly speaking the complaint seems unfair. For no theory of information, from the purely syntactical to the most strongly semantic, is meant to cast any light on the phenomenon of relevance. Critics, however, have at least a sort of normative point. For they protest that such theories should care more about the relevance of what they model as information. If they do not, this is their problem and a reasonable explanation of why they can be largely disregarded when it comes to one's informative needs in real life. Starting from this general perspective, in this talk, I will a) introduce the general debate on informational relevancy in a variety of context, from search engines and information retrieval to online advertising, from juridical procedures to everyday information processes, from medial diagnosis to scientific experiments; b) argue that a general theory of relevant information may be provided by a counterfactual and metatheoretical analysis of the degree of relevance of (some information) *i* for an agent *a* as a function of the accuracy of *i* understood as an answer to a question *q*, given the probability that *q* might be asked by *a*. This analysis will uncover some intricate issues; and finally c) show that a subjectivist interpretation of relevance as indicated in (b) can satisfactorily account for all the main applications and interpretations of the concept of relevant information that may be encoun-

tered in contexts such as those listed in (a).

Luciano Floridi is Research Chair in Philosophy of Information, Department of Philosophy, University of Hertfordshire, Fellow of St Cross College, University of Oxford and Director of the IEG, the interdepartmental research group on the philosophy of information, Oxford University. His area of research is the philosophy of information. His works include over seventy articles and several books on epistemology and the philosophy of computing and information. He is currently working on a new book entitled *The Philosophy of Information*, to be published by Oxford University Press.

NEWTON GARVER (Buffalo), Grammar and Silence

The silence at the end of Wittgenstein's *Tractatus* comes as the conclusion of his search to determine how meaning is possible, and is expressed in the oft-quoted sentence, "Wovon man nicht sprechen kann, darüber muss man schweigen." The 'must' in this sentence is a logical rather than a moral 'must', and the sentence itself a tautology rather than an exhortation. In his later work he continued his search for clarity by means of "grammar" rather than logic. Did this revision nullify the silence? When we understand what his "grammar" comprises, we see that when philosophy is restricted to grammatical clarifications, a restriction to which he was committed, we are obliged to note that making moral or metaphysical pronouncements is some other use of language than making grammatical remarks. That is a grammatical remark, just as the silence at the end of the *Tractatus* was a logical remark. So the silence persists in a slightly different form. It is remarkable that even when he was not doing philosophy, as occurs throughout the remarks collected in *Culture and Value*, Wittgenstein is reticent about making moral and political judgments. Although such judgments would not be philosophical (they would not be grammatical clarifications), it is difficult to see why a person who is a philosopher should not also express such judgments.

Newton Garver is SUNY Distinguished Service Professor and an active Quaker. Now retired from classroom teaching, he has published on Wittgenstein and philosophy of language as well as on the concepts of justice and violence. He frequently posts short essays on <http://buffaloreport.com/>.

His most recent books are *Wittgenstein & Approaches to Clarity* (Humanity Books 2006) and *Limits to Politics* (Center Working Papers, 2nd edition 2007). As a Quaker he has been active in the Alternatives of Violence Project, having facilitated about 50 three-day workshops in local prisons, and he is currently engaged in calling attention to the 30,000 Bolivian Quakers, all of whom are Native Americans, and their educational needs and aspirations.

*PETER KEICHER (Karlsruhe), Heidegger und Wittgenstein zur
Ontologie und Praxis der Technik*

Part I of this paper reconsiders Wittgenstein's critical remarks on the notion of 'progress'. Part II sketches the shift in Heidegger's ontological interpretation of technology from a 'metaphysical' to a more 'metaphorical' point of view. Part III discusses the main thesis of Heidegger's *Der Weg zur Sprache* in which he addresses Carl Friedrich von Weizäcker's theories on the relation between language and information. Part IV shows that Heidegger criticizes 'Gestell' ideologies but supports the use of modern technologies in the sciences, while he compares the right applications of technologies with forms of art. Part V shows parallels between Wittgenstein's views on progress and his critique of the *Tractatus Logico-Philosophicus*, followed by Part VI with an interpretation of Wittgenstein's critical remarks on dogmatism. Part VII examines parallels between philosophical and technical issues in the *Philosophical Investigations*. The main thesis of the paper is that Wittgenstein's pragmatism is a necessary and useful supplement to Heidegger's ontological definition of technology.

Peter Keicher, Studium der Philosophie an der Universität Karlsruhe (TH) und an der Université Paris VIII – Vincennes à Saint-Denis, Stipendiat der französischen Regierung (Außenministerium, diplomatischer Dienst), ERASMUS Stipendiat an der Universität Bergen, französische *Maîtrise* über Jean-François Lyotard, Diplomarbeit (DEA) über Martin Heidegger und Jean-François Lyotard, Herausgeber der interdisziplinären Zeitschrift *tacho, Zeitschrift für Perspektivenwechsel*, wissenschaftlicher Mitarbeiter am Wittgenstein Archiv in Cambridge, Redakteur des Springer Verlag, Wien New York, Gastforscheraufenthalte und EU-Stipendiat am Wittgen-

stein Archiv an der Universität Bergen, Promotion über Ludwig Wittgenstein an der Universität Karlsruhe (TH) und an der Université Paris VIII – Vincennes à Saint-Denis (*Lieux et transformations de la philosophie*), DFG-Forschungsprojekt zu Wittgensteins Nachlass, Grundlagenforschung zu Wittgensteins Nachlass, Aufsätze zur ästhetischen Praxis bei Wittgenstein „Aspekte musikalischer Komposition bei Ludwig Wittgenstein“ (*Das Verstehen des Anderen*, 2000), „Aspekte malerischer Gestaltung bei Ludwig Wittgenstein“ (*Traditionen Wittgensteins*, 2004), „Wittgensteins Bücher“ (*Schreibprozesse*, 2007).

DIETER KÖHLER (Karlsruhe), Towards Future Digital Scholarship

Analytical philosophy as well as hermeneutics have long ignored the media aspects of language and the importance of the division of labour for the formation of theories. With the Internet having altered academic discourse, these issues seem to have received more attention. However, the Internet poses not only a theoretical challenge for philosophy in particular, but also a more practical one for the humanities in general. Therefore, in order to retain autonomy over their research agendas, it is mandatory that the humanities establish a professional discipline of “humanities computing” within their departments; this to combine information technology, (digital) philology and net-based knowledge communication. Insofar as a future philosophy utilises digital media, it is not a mere observer of these endeavours, but profoundly affected by them.

Dieter Köhler is assistant professor at the Department of Philosophy and research coordinator of the Centre for Multimedia Studies at the Karlsruhe Institute of Technology (Germany). He holds a doctoral degree in philosophy from Heidelberg University, has worked at Bamberg University as a post-doctoral researcher and at the Victoria University of Wellington (New Zealand) as a visiting professorial fellow. He had been an “invited expert” in the Document Object Model interest group of the World Wide Web Consortiums (W3C). His publications include articles on analytical philosophy, information ethics, and computing. He maintains an Internet portal on philosophy as well as several open source projects in the field of humanities computing.

MATTHIAS KROSS (Potsdam), Medienphilosophie als ethisches Projekt? Vilém Flussers Wittgenstein

Vilém Flusser (1920–1991) gilt als einer der Begründer der gegenwärtigen Medienphilosophie. Weniger bekannt ist, dass er vor allem in seinen frühen, während seines Aufenthalts in Brasilien entstandenen kleineren Schriften – z.B. die Rezension der *Philosophischen Bemerkungen* in der *Revista brasileira de filosofia*– oder grundlegenden Arbeiten, z.B. *Língua e Realidade* (1963), wesentlich von der Philosophie Wittgensteins beeinflusst ist. Auch später ist er immer wieder auf dessen sprachphilosophische Einsichten zurückgekommen, wenn auch mit einer eigenwilligen, an Camus und Sartre orientierten existenzialistischen Wendung. In dem Beitrag werden verschiedene Stadien der Auseinandersetzung Flussers mit Wittgenstein nachgezeichnet und wird zugleich ein Beitrag zur Rezeptionsgeschichte Wittgensteins in der Medienphilosophie geleistet.

Matthias Kross, geb. 1953, Studium der Geschichte, Politologie, Philosophie und Kunstgeschichte in Marburg, Bremen und Berlin. 1993 Promotion an der Freien Universität Berlin mit der Arbeit *Klarheit als Selbstzweck. Wittgenstein über Philosophie, Ethik, Religion und Gewissheit*. Seit 1995 Wissenschaftlicher Referent am Einstein Forum, Potsdam. Seit 1997 Lehrtätigkeit an der Universität Potsdam. Zahlreiche Aufsätze zur Philosophie Wittgensteins. Herausgeber der Buchreihe *Wittgensteiniana* im Berliner Parerga Verlag. Zuletzt erschien darin: (Hg.): „Ein Netz von Normen“ *Wittgenstein und die Mathematik* (2008).

STEFAN MAJETSCHAK (Kassel), Psychoanalyse der grammatischen Mißdeutungen: Über die Beziehung Ludwig Wittgensteins zum Werk Sigmund Freuds

Wittgensteins Beziehung zu den Werken Sigmund Freuds, wie sie in zahlreichen Bemerkungen seines Nachlasses dokumentiert ist, läßt sich nur als ambivalent bezeichnen. Seine Bemerkungen changieren zwischen bewundernder Aneignung und heftiger Ablehnung von Freuds Gedanken. Wittgensteins kritische Lektüre Freuds war in der Forschung bereits häufig das Thema der Untersuchung. In welchem Maße Wittgenstein Freuds Ideen

positiv rezipierte, wurde dagegen weit seltener untersucht. Im vorliegenden Artikel wird gezeigt, daß Wittgensteins positive Aneignung Freuds zumindest während der dreißiger Jahre in seinem Verständnis von philosophischer Therapie greifbar wird, die nach dem Modell einiger Grundannahmen der psychoanalytischen Behandlung konzipiert ist.

Stefan Majetschak ist Professor für Philosophie an der Universität Kassel sowie geschäftsführender Herausgeber der Wittgenstein-Studien und des Wittgenstein-Jahrbuches der Internationalen Ludwig Wittgenstein Gesellschaft e.V. Veröffentlichungen zu Wittgenstein u.a.: "Ludwig Wittgensteins Denkweg" (Freiburg / München 2000).

*KERSTIN MAYR (Innsbruck), (Re)-Constructing the Semantic
Architecture of Wittgenstein's Vermischte Bemerkungen by
Syntactic Analysis*

Proceeding developments in digital humanities and questions concerning the constitution and textual organisation of Wittgenstein's *Vermischte Bemerkungen* suggested the venture to apply GABEK/WinRelan®, a multi-methodological oriented text-analysis tool, to these remarks. This paper introduces the technical terminology as well as some important aspects of the working process necessary for an understanding of the retrieval of thematic patterns and semantic fields within *Vermischte Bemerkungen*.

Born 1978. Studies in German Language and Literary Studies and English/American Language and Literary Studies, University of Innsbruck. M.A. Studies in Secondary English Education (specialized in American literature, reading and writing) at the City College of New York. Currently research assistant and Ph. D. Studies (interdisciplinary literary studies and philosophy) at the University of Innsbruck. Research fields of interest: Text Theory, Text/Content Analysis (computer-supported), Literary Studies, Narratology, Wittgenstein, Philosophy of Language, Philosophy of Aesthetics and (electronic) editing.

*KATALIN NEUMER (Budapest), Verdächtige Bilder und Töne:
Wittgenstein 1946–1951*

Nach einer der gängigen Positionen der heutigen Wittgenstein-Forschung habe Wittgenstein die Bedeutsamkeit der Visualität erkannt und in seiner Argumentationsweise die Bilder eine gewichtige Rolle spielen lassen. Auf der anderen Seite wird auch allgemein behauptet, daß Wittgenstein der stimmhaften Seite der Sprache eine große Bedeutung zugeschrieben hätte, woraus man u.a. auf seine Neigung zu den oralen Kulturen zu schließen pflegt. Was das erstere betrifft, erscheint die Bildhaftigkeit schon in Wittgenstein expliziten Äußerungen vielmehr als janusköpfig. Diesen Zusammenhang werde ich auf der Grundlage textnaher Analysen von einigen Stellen aus Wittgensteins letzten Jahren weiter entwickeln, wobei ich ebenfalls eine Doppeldeutigkeit der Stimmhaftigkeit nachweisen möchte. Darüber hinaus werde ich zeigen, daß Bilder und Töne in manchen Kontexten – insbesondere im Kontext des Aspektsehens und -wechsels, des Bedeutungserlebnisses und der sekundären Bedeutung, i.e. im Zusammenhang mit für die Jahre 1946–1951 charakteristischen Begriffen – miteinander in (öfters synästhetische) Verbindung gesetzt werden und mit Wittgensteins eigenem Ausdruck “verdächtig“ erscheinen. Dadurch werden Töne von ihrem Thron gestoßen und verwandeln sich in verführerischen Sirenen gesang.

Prof. Dr. Katalin Neumer, geb. 1956. Studium der Philosophie und der ungarischen Sprach- und Literaturwissenschaft an der Eötvös-Universität Budapest. Längere Forschungsaufenthalte in Heidelberg, Wolfenbüttel, Fribourg, Cambridge, Wien, Prag, Bergen. Seit 1987 am Institut für Philosophische Forschung an der Ungarischen Akademie der Wissenschaften tätig. Seit 1995 Präsidentin der Ungarischen Wittgenstein-Gesellschaft. Jüngste Veröffentlichungen: *Die Aspekte der Seele. Wittgenstein nach den Philosophischen Untersuchungen* (Budapest 2006); *Sprache, Denken, Nation. Kultur- und Geistesgeschichte von Locke bis zur Moderne* (Wien 2005); *Traditionen Wittgensteins* (Frankfurt a.M. 2004).

YUKIKO OKAMOTO (Tokyo), Computability of Reality as an Unfulfilled Dream

Constructing a semantic web requires a profoundly contemplated ontology in a certain sense, but not in the traditional sense. However, enquiring into the background of the growth of information systems ontology, we can find their collaboration with philosophy. Furthermore, both fields seem to share a dream. Either from a practical demand for the most generous ontology or for the ideal of total clarity, both might have been driven to accomplish a dream of perfect reconstruction of reality. But there emerge fundamental differences between them, too. For the total reconstruction of reality (computability of reality), everything in the world could be rewritten by a machine-readable language and reconstructed into various databases. But could everything be explicitly represented and captured by that language? Very unlikely. Philosophy would penetrate into the dimensions of implicit background of what could be explicitly represented. Philosophical thinking also elaborates its own methodology, recurring to such dimensions. The authentic tasks for philosophy thus might be to explore such dimensions and continue questioning the meaning of cyber technology itself.

Dr. Yukiko Okamoto has been associate professor of philosophy at Kasei Gakuin University (Tokyo). She is the Commissioner of the Japan Society of Information and Knowledge and member of the Committee of the Philosophical Association of Japan. Her scholarly activities abroad started with “A Possible Theory of Moral Values” in the XVIII. World Congress of Philosophy (1988). Her Ph.D. research focused on the theory of meaning in Husserl (1997). Her publications include articles on the relationship between Phenomenology and Wittgenstein, the meaning of “Life-World” and the one titled “Computability and Meaning – some Phenomenological Issues in constructing a Cyberspace” in *Husserl Studies Japan* (2006).

*MICHELE PASIN & ENRICO MOTTA (Milton Keynes),
PhiloSURFical: Browse Wittgenstein's World with the
Semantic Web*

How many resources about Wittgenstein exist on the web? How do they

relate to each other? What is the most productive way to navigate them, from the point of view of a learner? With the development of the PhiloSURFical tool, we aim at investigating these and other related issues. PhiloSURFical is a software environment which builds on Semantic Web technologies in order to facilitate the navigation and understanding of Wittgenstein's first work, the *Tractatus Logico-Philosophicus*. By relying on an ontology created to describe the philosophical domain at various levels of abstraction, PhiloSURFical presents the original text and other associated resources in a contextual manner. This can be achieved through a process of narrative pathway generation, that is, the active linking of resources into a learning path that contextualizes them with respect to one another. In this article we introduce the learning paths which PhiloSURFical makes available and highlight some of the modeling issues which emerged as fundamental in supporting such navigations, in the emerging web of data.

Michele Pasin's research focuses on the employment of Semantic Web technologies for supporting learning. In particular, he has been looking at the potential usage of such technologies in the humanities' domains. The main outcome of his PhD research at the Knowledge Media Institute (KMi) of the Open University in Milton Keynes, UK, is PhiloSURFical, a software tool that supports the smart navigation of a philosophical text by means of an extensive underlying semantic model of the philosophical domain. Previously, he graduated in philosophy at the University of Venice, where he was working mainly in the fields of epistemology and philosophy of language.

Enrico Motta is Professor of Knowledge Technologies at the Knowledge Media Institute (KMi) of the Open University in UK. His current research focuses primarily on the integration of semantic, web and language technologies to support the development of intelligent web applications, able to exploit the large scale data provided by the emerging Semantic Web. Motta is Editor in Chief of the *International Journal of Human Computer Studies* and the author of over 180 refereed publications.

VICTOR RODYCH (Lethbridge), Mathematical Sense: Wittgenstein's Syntactical Structuralism

On Wittgenstein's purely syntactical, radical constructivist account of mathematics, the *sense* (meaning) of a mathematical 'proposition' is not at all like the sense of a contingent (empirical) proposition. In the latter case, a contingent proposition has a fully determinate sense as a function of linguistic conventions, which make it possible to fully understand the sense of a contingent proposition without knowing its truth-value. In the mathematical case, however, a so-called "mathematical proposition" only has sense when we have *proved* it (with understanding) and thereby located it within the syntactical structure of a mathematical calculus. This paper aims to (1) show *how* Wittgenstein's radical position on a mathematical proposition and its sense results from his life-long view that mathematics is exclusively syntactical and invented bit-by-little-bit by human beings, (2) *propose* a particular conception of "mathematical sense" – and an interpretation of Wittgenstein's remarks – that best resolves the internal tension between two of Wittgenstein's principal views on mathematics, and (3) consider some objections to Wittgenstein's view and how he does or might respond to them. The paper shows that, on Wittgenstein's account, the sense of a mathematical proposition *is* its syntactical location and its syntactical connections within a purely syntactical calculus.

Victor Rodych is Professor of Philosophy at the University of Lethbridge (Alberta, Canada). He is the author of "Wittgenstein's Philosophy of Mathematics" (2007), "Who Is Wittgenstein's Worst Enemy?" (2006), "Pragmatic Platonism" (2004), "Searle Freed of Every Flaw" (2003), "Popper versus Wittgenstein on Truth, Necessity, and Scientific Hypotheses" (2003), "Gödel's 'Disproof' of the Syntactical Viewpoint" (2001), "Wittgenstein's Inversion of Gödel's Theorem" (1999), and numerous other articles on Wittgenstein's Philosophy of Mathematics. When he isn't playing squash, Victor, his wife Rachel, and their four children spend as much time as possible in the Rocky Mountains.

DAVID G. STERN (Iowa), Digital Wittgenstein Scholarship: Past, Present and Future

The Bergen edition of the Wittgenstein papers was published in 2000. Even by the relatively slow-moving standards of academic publishing, one might well expect that by 2007 we should be able to assess the impact of this “digital turn” on Wittgenstein scholarship. The available evidence suggests that its impact has not, so far, been as large as early reviewers hoped — or feared. While a number of Wittgenstein experts, myself included, regard it an invaluable resource, the vast majority of work on Wittgenstein makes little or no use of the digital turn. With a few notable exceptions — principally editorial work on Wittgenstein’s writing, and the study of the composition of his work — writing on Wittgenstein in a possible world where the Bergen edition was never published would be almost indistinguishable from our own. However, we frequently overestimate the short-term effects of technological changes while underestimating their longer-term impact. The Bergen “edition” is not a book, but a piece of software, and must be evaluated in those terms. As the results of the work of the first generation of users of this software reach a broader audience, and as the software becomes easier to use, we can expect that the digital turn in Wittgenstein studies, like the web browser in the 1990s, will eventually reach a wider audience.

David G. Stern is Professor of Philosophy at the University of Iowa. He is the author of *Wittgenstein’s Philosophical Investigations: An Introduction* (Cambridge, 2004) and *Wittgenstein on mind and language* (Oxford, 1995), and co-editor of *Wittgenstein Reads Weininger*, with Béla Szabados (Cambridge, 2004) and *The Cambridge Companion to Wittgenstein*, with Hans Sluga (Cambridge, 1996).

LUIS M. VALDÉS-VILLANUEVA (Oviedo), Santayana and Wittgenstein on Scepticism

This paper draws a comparison between the treatments of scepticism by George Santayana (1863–1952) and Ludwig Wittgenstein (1889–1951). In spite of their differences in philosophical temperament, both philosophers shared a sustained concern for philosophical scepticism. Santayana’s

“thought-experiment” leading to the “solipsism of the present moment” is analyzed together with his *sui generis* form of dogmatism. Using James Conant’s distinction between the “Cartesian way” and the “Kantian way” with scepticism, it is suggested that Santayana’s dealing with scepticism is a variety of the Kantian way – not very remote from Wittgenstein’s aim and practice –, though without the benefit of the “return to the ordinary” provided by the analyses in *On Certainty*.

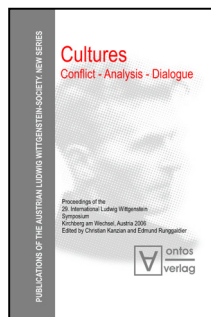
Luis M. Valdés-Villanueva is Professor of Logic and Philosophy of Science at the University of Oviedo (Spain). He has also taught at the Universities of Valencia and Murcia. His interests include topics in Philosophy of Language and Philosophy of Mind. He has published, among other things, several articles on the philosophy of Wittgenstein and he is the author of a Spanish translation of the *Tractatus*. He is the current editor of the Spanish journal *Teorema. Revista internacional de filosofía*.

THE EDITORS ALOIS PICHLER AND HERBERT HRACHOVEC

Herbert Hrachovec, born 1947, is associate professor of Philosophy at the University of Vienna and member of the University’s academic senate. He has founded an electronic archive for philosophy texts and a repository for audio documents of a theoretical nature. For more detailed information see <http://hrachovec.philo.at>.

Alois Pichler, born 1966, is a member of staff at the Department of Culture, Language and Information Technology (AKSIS) at UNIFOB AS, Bergen, Norway. He is Director of the Wittgenstein Archives at the University of Bergen. He is member of the Executive Committee of the Austrian Ludwig Wittgenstein Society. Homepage: <http://teksttek.aksis.uib.no/people/alois>.

Volume 3



Christian Kanzian, Edmund Runggaldier (Eds.)

Cultures. Conflict - Analysis - Dialogue

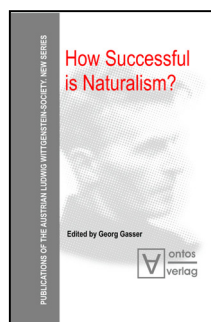
Proceedings of the 29th International Ludwig Wittgenstein-Symposium in Kirchberg, Austria.

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Volume 4



Georg Gasser (Ed.)

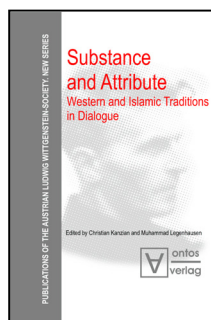
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