Texts Do Not Reflect Outer Reality. What Do They Do Then?

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The problem of world-language relation may be posed in a number of ways. Indeed, one could re-write the entire history of philosophy focused on that question. Nevertheless, there are more and less important subproblems gathered in here. I view the problem of innovation as a tough one. Uses of language and the processes in the world are relatively stabilized when nothing changes, thus we stay happily untroubled. However, when a change occurs, resulting for example, from a scientific cognitive development, we are puzzled and try to figure out an explanation. How is it that yesterday we wrote so-and-so, and today our view has expanded, and writings changed, and all that works somehow? Since we start with the language-world dichotomy, then the very problem boils down to a question of a relation between the opposite poles in the context of occuring changes. Here, scientific texts enter the stage, because of their crucial role in scientific cognitive practices. Thus a problem emerges: what do the scientific texts do? A realist would respond: scientific texts reflect reality, and they progressively improve at that.

On the other hand, constructivist approaches reject the thesis of texts reflecting some "outer reality". One possible argument here points out the philosophical vagueness of "reality" and "reflecting" (see for example: von Foerster / Poerksen 2002, 17-63). Those concepts work well as commonsensical, but they are not useful in a philosophical argument. Yet, the realist could defend the thesis saying that the principle of charity forces us to exchange the problematic concepts for some unproblematic ones. The first ones are only cognitive shortcuts. While saying "reality" one may think of certain "pieces of reality" – states of affairs, situations, objects, relations etc. While saying "reflect" one may think about making descrip-

tions, fabricating scientific texts, which progressively describe "pieces of reality".

In my text, I would like to argue against the idea of reflecting reality in scientific texts. But it is not my intention to violate the charity principle and criticize the notions of reality or reflection.

I would like to point out four models, which help in rejecting the metaphor of reflecting the reality. These are: Josef Mitterer's non-dualizing way of speaking (Mitterer 1992, 1996, 2001), Bruno Latour's circulating reference (Latour 1999), Ludwik Fleck's idea of thought styles and collectives (Fleck 1999) and some general assumptions of epistemological contructivisms (see for example: Riegler 2001).

Josef Mitterer analyses a structure called „dualizing way of speaking", which is so deeply inscribed in philosophical discourse that it has become a condition of a rational thinking. Thus philosophizing equals to solving problems generated by and inside the structure. Mitterer says:

> There are no problems at the beginning of philosophy. There are only unproblematized assumptions. Those assumptions consist of dichotomous distinctions (in epistemology and philosophy of language these are for example such dichotomies as: language-world, object-description, object-proposition, being-consciousness, subject-object, and others) (Mitterer 1996, 3).

Mitterer points out that dualizing structure dominates in philosophy since Plato. This thesis could be backed up by findings from history and cultural studies, especially works by Eric Havelock (for example Havelock 1963) and orality/literacy studies in general (see for example: Olson 1994). I claim that Plato (and other ancient philosophers) created the dualizing structure in response to alphabet writing, a new powerful communication technology. One of its advantages is the ability to bind together written symbols and phenomena (events, objects, relations) in a non-written world. Such is an experience of the first traders, and people who run temples or political institutions. Mitterer's critical work magnificently demonstrates how and why the dualizing way of speaking is not able to fulfill its promises. Though, it speaks about the other side of discourse, the very access goes through language. An object of description is never an "innocent", "untouched" object waiting outside the discourse. It is always inscribed in our language games. This argument doesn't say that physical reality is actually textual. It says that the textual, the physical, the social and so on, are

intertwined so inextricably that the dualizing speaking is not able to pinpoint the complexities of knowledge processes. And needles to say, the idea of texts reflecting reality belongs to the dualizing way of speaking.

Mitterer's non-dualizing speaking, developed as an alternative, views knowledge getting and cognitive processes as moving from a *so far* description to a *from now on* description. So the general picture is of a network of descriptions. But, as I believe, the notion of "description" must not be interpreted narrowly, purely linguistically. I'd rather follow Jacques Derrida and point out that words like "description", "to de-scribe", "to inscribe" and "to scribe" always suggest marking physical traces (Derrida 1976). Whether there are traces on paper, clay plate, sound waves, lab computer signals, digital photos, or plant samples collected by a botanist, is a minor issue. The conclusion is as follows: when asking "what do the scientific texts do?" the answer would be: "they tie together different descriptions making networks".

In his *Pandora's Hope*, Bruno Latour introduces and elaborates the concept of circulating reference (1999, 24-79). The concept is a result of using methods of Actor-Network Theory (ANT) to answer the question "how do the scientists pack up the world into words?", or "how is it that scientists start with a research subject, and end up with a report (a book, paper, conference speech) in their hands? First of all, they never leap over a huge abyss separating the domain of things from the domain of signs (or knowledge). This leap is a myth. However, they undertake a number of actions, manipulating their objects, making physical traces (as mentioned above), and doing translation. Latour follows translations in scientific research aiming at determining whether the Amazon forests expand or shrinks in favor of savannah. The scientists first select a small piece of land in the forest-savannah border, then they collect samples, describe them and put into order. After that they are ready to sketch preliminary schemes illustrating correlations. Only then they start to make a report. Instead of one big leap and a binary opposition (e.g. between world and words), there is a chain or a network of actions. Latour describes that as circulating reference. Similarly to electric current, the path leading from an initial research subject to a final report requires the circuit (network) to be uninterrupted.

A number of conclusions follow. First: it doesn't make sense to speak of two domains, when there are multiple leaps. My studies proved an

amazing variety in this respect. For example, a sociological survey needs several steps, while a friend of mine working in an oncological laboratory needed over two hundred steps for his research to be done. Second: it doesn't make sense to use a metaphor of mirroring, since there are more diverse relations. More accurately, one may speak of circulating (following Latour) or translations. Third: one is hardly able to qualify pieces of translation networks as belonging to "world" or "language", because the previous elements are always more material, while the next ones are more sign-like. So either you enable gradual belonging to world or words, or give up the categories altogether. Fourth: scientific texts do not reflect outer reality, so when answering "what do they do" question, one just says "they belong to networks of scientific practices". This leads to the following question: "what do they do in those networks?" To answer this, one has to, according to ANT, study the very texts. We will get back to this later on. But first, I would like to refer to two other criticisms of the mirror concept.

Ludwik Fleck, in his *Genesis and Development of a Scientific Fact* (1999), offered a couple of insights about scientific texts. First, authors always inscribe their friends and foes in scientific texts. Secondly, the functions of journal texts are different from those from handbooks. The former written as a sort of drafts, always enter the heat of scientific controversies. They may become classic, be attacked, criticized or just ignored. The latter present finished, ready-made knowledge.

This assumes that a text is not just a story about a piece of world, but always a participation in a game with other fellow scientists. Thus saying that texts reflect reality and all the other text elements are a contingent vehicle, hardly holds on. It sounds reductive, and reduction always needs to be thoroughly justified. All the while, if we removed the game aspect of the texts, the very scientific activity would be impossible. Science is a collective enterprise, and isolated, solitary geniuses are pop-cultural myths.

The journal-handbook distinction also stresses the collective character of science. Scientific thought styles need diverse tools for different purposes – practicing in journal texts, and fixed contents of handbooks. One cannot name the most important ones without falling into reductionism. Get rid of them (journals or textbooks) and you undermine the scientific practice again. Furthermore, it is easy to expand Flecks observations to other accounts and their functions – reports for non-academic institutions,

conference presentations, lectures for doctoral students, seminar discussions etc. Scientists developed the whole gamut of tools to facilitate their job, which Fleck described as manipulating of active and passive factors. Different texts do different jobs with that. Handbooks come up to 100% of passive factors, while seminar discussions may involve much more active elements to search for new paths, surprising solutions or astonishing concepts. So, here is the conclusion of the Fleck part: when asking "what do the texts do", one answers that they operate on active and passive factors, stimulate connections among them, change their status, search for the new ties, finally, they themselves turn into active/passive elements.

Risking overgeneralisation, I would like to unite various constructivisms under a label of "epistemological constructivism". It says that we are not able to say anything about reality in itself, instead we operate only in the representations, which are our cognitive constructs (see Riegler 2001). Yet, we cannot manipulate them at will, they are just representations conditioned by our biology, culture, psychology and so on. Thus, they do not reflect anything, and accordingly, texts do not reflect anything. They operate on the cognitive system (biological organism, individual, culture) inner representations, referring to inside and outside of the system. Thus texts could be viewed as inner constructed representations of outer reality and of states of the system. I wouldn't like to accept all the constructivist assumptions, however one constructivist step seems crucial here. It exchanges "reflecting" for "representing". Then, instead of searching for the (in)accurate reflection, we may ask different questions: "what is represented?", "what is the medium of representation?", "what is the purpose of representing?", "what's its mechanism?".

Let me sum up the arguments. Philosophical structure consisting of a relation of mirroring world in texts needs to be dissolved. We should ask what happens in texts, how do texts participate in reconstructing of our collective world, instead of just asking what a given text is about. The latter is a practical question, not a general, philosophical one. This leads to a next question: "what kind of network does the text help to build?" What circulates in the reference chain? How is a particular text connected to other texts, where are the active and passive elements? And, what does it mean "to represent"?

Thus, by giving up a reflecting metaphor, four others may prove to be useful: network assembling, reference circulating in circuits, activating and dis-activating, and representing.

Now, I'd like to present my second argument, which is of a different kind. The first one referred to four general concepts, or models, which help to give up the idea of mirroring, and therefore any dualizing philosophical discourse that speaks about language and world. Now, relying on empirical studies done in science studies on scientific texts, I would like to indicate several phenomena common in scientific texts. This would be my direct answer to the initial question. Unfortunately, there is no room for examples, so I just list them referring to works of Bruno Latour and others (Latour 1987, 21-62; Latour / Bastide 1986; Latour / Woolgar 1979, 151-186; Callon / Law / Rip 1986).

1. Scientific texts associate the known and usual with the unknown and unusual. That is called "a cognitive profit". Or, alternatively, they also reassemble the known in an unusual way.

2. But sole associating won't do. Scientific texts need to convince their reader that it is so. Thus the second task: to lead a reader from a beginning to an end without losing him/her. S/he needs to be overwhelmed by nuances of arguments, convinced by the author's claims while dropping all the doubts. The text has to change its reader. It needs to take care of him/her.

3. The author, through the texts, becomes a new expert covering the presented area. If s/he succeeds, and the texts is viewed as credible, s/he will get credits, and change his/hers scientific status. But if s/he looses, s/he will become a fiction writer, an illusion expert, will miss a chance and loose the reputation. Furthermore, the author himself/herself defines his/her new abilities in the very text: being just a continuator, sole revolutionist, or modestly completing missing parts of a worldview.

4. This also means that each text actively modifies all the other texts, it refers to in footnotes. It confirms, approves or rejects them. The former authors are called "brilliant researchers", or "irresponsible frauds". It pinpoints contradictions and amazing solutions.

5. Thus each text interprets other texts. It cuts out concepts and fundamental ideas, points out crucial claims, evaluates other's arguments.

6. If the text succeeds, and leads its reader safely all the way down, there is a possibility that the reader will then act – will undertake a research or write a new text. So the scientific text may possess an ability to stimulate actions.

7. Texts by speaking of the unknown, introduce new phenomena and new beings into our collective life. And, while doing that present a brave new world, or our old familiar world anew.

8. Philosophers of science tried to solve a problem of induction – how to leap from a finite number of empirical cases to a general proposition. Scientific texts usually need to solve that without much hesitation. So, finally, they are also able to solve sophisticated philosophical problems.

Here are the conclusions. Even, if at first sight scientific texts seemed to reflect "outer" reality, it is not so. We listed both general arguments, and generalizations from observations and empirical investigations. So doing philosophy by relying on language-reality opposition is nothing more than just a mistake. And here is the bad news: some of the traditional philosophical models are not useful anymore, officially becoming now museum pieces. But there is also a good news: the problem is much more complex than it seemed before, so we, philosophers, have still a lot of work to do.

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