***Mono-perspective views of multi-perspectivity :***
***Information systems modeling and 'The bild men and the elephant'***

**Acta Wexionensia**
No 87/2006
Information systems

# Mono-perspective views of multi-perspectivity: Information systems modeling and 'The blind men and the elephant'

*Edith Feistner*
*Alfred Holl*

Växjö University Press

**Mono-perspective views of multi-perspectivity : Information systems modeling and 'The bild men and the elephant', Växjö universitet 2006.**

*Series editors:* Tommy Book and Kerstin Brodén
*ISSN*: 1404-4307
*ISBN:* 91-7636-500-X
Printed by: Intellecta Docusys, Göteborg 2006

# Table of Contents

# 0. Introduction

## 0.1 Exemplary stories used by computer science and information systems

Since the 1960s, many attempts have been made to structure software development projects with the help of ever new phase concepts and to facilitate modeling with the help of ever new modeling notations. This process seems to be a never-ending story: in spite of the efforts made, however, we are still far from having reached the desired success, namely a sustainably better project time management and, as a consequence, the considerable reduction of project costs.

From this situation, it is obvious that a great deal of the difficulties encountered in information systems (IS) modeling cannot be explained completely and definitively by computer science (CS) itself. One must go beyond its boundaries and consult other disciplines: ergonomics, human resources psychology, sociology, epistemology. Nevertheless, CS and IS have up until now only rarely been regarded from these aspects, least of all from the aspect of epistemology. This is due to the fact that research in this field requires quite a bit of project experience, a good background in the humanities and familiarity with epistemological approaches, particularly those from the natural sciences.

Epistemology is the branch of philosophy which deals with the acquisition, nature and limits of knowledge, especially scientific knowledge, such as the formal models necessary for implementing enterprise IS on computers. One of the authors (AH) calls the corresponding branch of CS / IS *epistemology-based IS modeling* or, more generally, *epistemology-based software engineering*. Our considerations in this paper focus on an epistemological question of IS modeling.

Teaching CS and IS students the fundamentals of this subject remains a difficult pedagogic challenge. As in other sciences, the teacher should combine dry theoretic results with suitable illustrative examples. Where from can a teacher take the latter? Only from a wide project experience which students cannot be expected to have: most of the examples chosen would allude to this experience and thus miss the didactic purpose intended. Therefore, small, comprehensible and retainable examples for epistemology-based IS modeling are rare. AH has been facing this pedagogic problem for more than a decade.

There is, however, another way of giving illustrations: not to take them from IS, but to resort to an old didactic and rhetorical tradition and to use brief,

exemplary stories for illustration and demonstration. This strategy is known in CS and IS, even if it is not widespread. For instance, Wilhelm Steinmüller makes use of a story when explaining the question of multi-perspectivity and its consequences: "An ant state launched a research project about an elephant. One research group investigated the trunk, the other one the hoof. When the results were compared, a quarrel broke out between all the persons involved ... The government decided to stop the project due to unsolvable differences in the scientists' opinions" (Steinmüller 1993: 51 translated by AH).

Traditionally, this exemplary story appears in the form of 'The blind men and the elephant': a group of blind men, who do not know what an elephant is, have to or want to figure out what this animal is like. They touch different parts, hence get different impressions (partial knowledge), communicate them to each other and start wrangling.

Already at first glance, indeed, the epistemological situation of the blind men reminds us of multi-perspectivity in modeling, an important epistemological aspect of IS modeling: a team of model designers tries to describe a real open system in an enterprise from different modeling aspects, such as an information flow model, a business process model, an entity-relationship model, a class model, etc. They have to eliminate the inconsistencies arising during the modeling process and – if they become aware of them at all – ... start wrangling ... which costs a lot of time and often does not lead to any solution.

This at least two-thousand-year-old Asian exemplary story was not systematically taken into consideration by the research of the past five decades. We, however, consider it an excellent illustrative example for the undesired effects of multi-perspectivity in IS modeling. This is the reason for the cooperation of a researcher in the field of cultural and literary studies, including the Middle Ages (EF), and an IS expert and linguist (AH), who both have a deep and strong research interest in epistemological questions. Neither of us is an Orientalist, but nevertheless we have become fascinated by the development of this exemplary story and its multi-perspective interpretations against different cultural backgrounds in different ages.

It is worth having a closer look at this type of text in the context of CS / IS.

Our interdisciplinary cooperation has the effect that our paper is neither a pure humanities paper neither a pure CS / IS paper. It is written with the intention to make it well readable and clearly understandable for researchers in either field. Usually, both of the fields concerned differ a lot in their terminologies and their styles of presentation. Therefore, two restrictions had to be made. Particular terminology had to be reduced as far as possible as well as the style had to be kept on a simple level, much closer to technical than to literary writing.

## 0.2 Exemplary stories examined and explained by literary studies

In order to establish a constant template and a consistent terminology for the description of the versions of our exemplary story, we have to introduce

fundamentals from literary studies with regard to exemplary stories in general, the related types of text and their function.

An exemplary story is a brief, instructive and convincing story (partly reminiscent of a caricature or an experiment in a laboratory) which always serves two purposes: it is intended to teach (benefit) and please (Horace's *prodesse et delectare*), even more, to intensify its teaching force by its entertaining value. Its didactic range (or potential) can be derived from a judgment of (interpretation of, evaluation of, statement about or consequences from) the situation and behavior presented in the story. If this judgment is implicit - but obvious - or explicitly stated at the end or somewhere in the context, the combination of an exemplary story and its judgment is called an **exemplum** using a *terminus technicus* from literary studies.

The **internal moral**[1], as we call this judgment, has not yet to do with an analogical transfer to an application area ('moral' in everyday language or more exactly 'external moral', see below); it merely provides the possibility for this transfer. In our case, the cognitive behavior of the blind men, that is, to consider mono-perspective, incomplete views of one and the same elephant as complete, absolute knowledge about it, is judged as stupid. A good example of an explicit wording of an internal moral can be found in the Chinese translation of the Buddhist version:

> "Well now, you crowd of blind men,
> you dispute in vain and pretend to tell the truth,
> having perceived one aspect, you state that the rest is wrong,
> and you are quarreling with regard to an elephant."
> (Chavannes 1910-34: I 339 translated by AH; French original see 4.1.2)

In everyday language, the term *exemplum* is not common, but often replaced by the term *fable* for a subtype as *pars pro toto*. A **fable** is defined as an exemplum with an exemplary story, where animals act like humans (e.g. the ants in Steinmüller's story). Beyond this special subtype, however, most exemplary stories do not present acting animals (e.g. the blind men in the traditional version of our story). That is why the umbrella term *exemplum* is necessary. One and the same motif complex can be dressed as a fable or as a general exemplum. Incompatible views of an elephant appear in the form of a fable, as in Steinmüller's version, or in the form of a general exemplum, as in the traditional version. Note that the elephant itself is only an object, it does not act; the traditional version is not a fable, as humans are the actors. This type of exemplum, where animals play a role in a story determined by humans, was rather popular in the Middle Ages.

The exemplum is a functional text category which always serves a didactic purpose. The recipients are intended to learn something. Therefore, an exemplary story is applied to some **application area**, e.g. a statement to be confirmed or a situation in human real-life to be judged. This works with analogical transfer,

[1] The term *moral* means instruction or interpretation and does not aim at "morality".

which is only possible if the exemplary story and the compared application area are obviously and undeniably similar (= comparable). Only in this case, it is possible - using analogical transfer - to establish an **external moral**, which is analogous to the internal moral and can be applied to the application area intended. In the final result, exemplum and application are entirely analogous, as their two parts, exemplary story and application area, as well as internal moral and external moral, are analogous.

In order to go into more detail, we have to explain the background of similarity and analogy (cf. Holl 2003). Two objects of cognition (e.g. situations, physical objects, mathematical concepts, etc.) are similar if and only if they coincide in some features[2]. These common features *inductively* constitute a type which can be designated by an umbrella term and which is the "basis / linkage of comparison", traditionally called *tertium comparationis*. This type can be *deductively* applied to other similar objects (classification, pattern recognition). Comparative or analogical thinking is a special form of abstracting thinking, as the *tertium comparationis* is a common abstraction, a generalization, of all of the compared objects, as it comprises less features than they themselves. This shall now be illustrated with some examples: you can compare an ostrich and a swan on the basis of the underlying type "bird" (*tertium comparationis*) which comprises common features, such as oviparous vertebrate with wings and feathers, etc.; but you can also compare a red book and a red chair because they are "red office supplies", or a red bird and a red pen because they are just "red physical objects". What we have explained for two similar objects of cognition, applies also for sets of similar objects.

In order to represent these abstraction levels of analogical thinking unequivocally, we introduce a special terminology. We call the *tertium comparationis* of an exemplum and its possible applications the **generalization of an exemplum**. It consists of a *generalized story* and a *generalized moral*.

A **generalized story** is the *tertium comparationis* of an exemplary story and its possible application areas. It is a lot more complex than the examples above; it comprises an abstract motif complex, that is, abstractions of properties, persons, objects, courses of events, modes of behavior, etc. In our case, one would abstract from the blind men to humans in general and from the elephant to an object of cognition in general (see 2.1 for details).

A **generalized moral** is the *tertium comparationis* of an internal moral and its possible external morals. As it is wider, more comprehensive and more general than any concrete external moral given to an exemplary story in its history, it determines the range or potential of all its possible external morals. In our case, one would say that to consider mono-perspective, incomplete views of one and the same object of cognition as complete, absolute knowledge about it is stupid (see 2.1 for details).

---

[2] Similarity is of course not an immanent property of objects of cognition, but one which is assigned to them in a *constructivist* way by humans who decide upon which features are considered as important!

We summarize our terminology:

On the same lower abstraction level, we define two parallels linked by analogical transfer:

- **Exemplum**: **exemplary story** and **internal moral**
- **Application of an exemplum**: **application area** and **external moral** (often just 'moral')

On a high abstraction level, we define:

- **Generalization of an exemplum**: **generalized story** and **generalized moral**

These aspects of an exemplum can again be found in the structure of the paper.

# 0.3 Overview of the paper

Chapter 1 deals with the versions of the elephant exemplum and their applications to metaphysical questions in the history of civilization. They are presented in their cultural context. We take stock and trace the elephant exemplum back to its Buddhist origin, then follow its way through the centuries from medieval Islamic theologians and Hindu philosophers to modern poetry, asking ourselves why it cannot be found in the Christian Middle Ages. Along this way, we see the elephant exemplum and its applications vary.

Chapter 2 deals with the generalization of the elephant exemplum and its application to epistemological questions. We will abstract from the cultural context and from the versions of the exemplary story and formulate the core of its story, that is, the common motif complex which can be found in each version. Hence, we will derive the generalized story and the generalized moral. On this basis, we will give an epistemological classification of the different versions.

Chapter 3 deals with the application of the elephant exemplum to IS modeling. We will analyze the aspects of multiple mono-perspectivity and conflicting partial models in IS modeling and demonstrate approaches to a well-reasoned and conscious treatment of their integration and harmonization.

The appendix has the same structure as Chapter 1 (e.g., the source to 1.2.3 can be found in 4.2.3). For each version of the elephant exemplum, it comprises:

- The bibliographical reference to the original source
- An English translation, where the elephant exemplum itself is indented within its context: it is rather difficult to get access to books containing English translations of the original works containing the elephant exemplum. They often date back to about 1900, and copies in libraries are very rare; only a few of them can be found in www.sacred-texts.com. The same applies to the modern American poems. Therefore, we always quote the complete texts.
- Bibliographical references to translations.

# 1. The versions of the exemplary story in the history of civilization

Some of the elephant exemplum's important occurrences are already mentioned in standard indexes of folk literature, such as Aarne / Thompson 1961: 392 (nr. 1317); Thompson 1960: 137 (nr. 1317); Thompson 1966: IV 144 (nr. J 1761.10); Thompson / Balys 1958: 271 (nr. J 1761.10); Taylor 1951: 582 note 11. The other occurrences had to be figured out by carefully searching in other sources, although at the end, you can never be sure that you have got all of them.

In this chapter, we follow the elephant exemplum's path from Buddhism (1.1) via Islamic mysticism (1.2) and Hinduism (1.3) to modern poetry (1.5), discussing its absence in the Christian medieval tradition of exempla (1.4).

For each version, we deliver:

- Biographical data about the narrator in a footnote, information on the work containing the elephant exemplum and other historical data: in Indic and Arabic words, diacritics (e.g. ^ or ´ or ¯ indicating the length of a vowel) are given when a term is introduced and then, apart from literal quotations, omitted.
- A rough summary of the story; the internal moral
- A comment on the story with regard to the judgment of the epistemological situation of the blind men; categories of the formalized description pattern in the table in 2.2 are used.
- The external moral, that is, an application of this epistemological situation to a particular object of cognition, which is very often God or some metaphysic question, but can also be secularized. The external moral can be found immediately at the end of the exemplary story, in a surrounding story or in the comments of the narrator who uses the elephant exemplum.
- A comment on the cultural context.

# 1.1 Buddhist literature

The first occurrence of the elephant exemplum can be found in the *Pâli-Canon*[3], the voluminous collection of the holy scriptures of Hînayâna Buddhism in Sri Lanka, Myanmar (Burma) and Thailand, written before 250 BC (Seidenstücker 1920: xx, assuming Buddha's death around 480 BC). The original name of the *Pali-Canon* is *Tipitaka*[4]. This means 'three baskets', which refers to the three main parts of the *Pali-Canon*.

The following facts about the internal structure of the *Tipitaka* are taken from a standard history of the literature of India (Glasenapp 1929: 130). The exemplum of the blind men and the elephant can be found in the second basket, the *Sutta-Pitaka*[5], the 'basket of narratives'. Within the *Sutta-Pitaka*, we have to look in part 5, the *Khuddaka-Nikâya*, the 'collection of short pieces', and there, in part c, the *Udâna*, the collection of 'solemn utterances' of the Buddha. The *Udâna* is split up into chapters (*vagga*), the sixth of which is entitled *Jaccandha*, 'the blind by birth'. In this Chapter, *Sutta* 4 (*Tittha Sutta* 'narrative of the sects') contains the elephant exemplum.

Each *sutta* in the *Udâna* consists of a long introductory story and a short final *udâna* ('solemn utterance') of the Buddha, the latter supposed to be even older than the former. The elephant exemplum is embedded in a story telling how Buddhist monks (*bhikkhus*) hear non-Buddhist (Hindu) ascetics violently dispute about whether the world is eternal or not, whether it is infinite or not, whether the soul is the same as the body or distinct from it. They leave the discussion and meet the Buddha in Anâthapindika's garden in the Jeta wood near Sâvatthi[6] and ask him about those controversies.

The Buddha answers the question with the elephant exemplum:

> The King of Sâvatthi has all the men born blind in Sâvatthi brought to his court, where they are forced by a "show-man" to touch different parts of an elephant. When the King then asks them what an elephant is like, they give different answers according to which part of the elephant's part they

---

[3] Pali is an Indo-European language, the oldest level of the Middle Indic languages, and was used until around 1200 AD. The best-known Ancient Indic language is classical Sanskrit, the literary language of India and Hinduism, the grammar of which was fixed by the Indian grammarian Panini (stress on the antepenultimate syllable) before the 4th century BC. Compared with Sanskrit, Pali comprises simplifications in phonetics (assimilations) and inflection.

[4] The Pali word *Tipitaka* carries the stress on the antepenultimate syllable. The corresponding Sanksrit word is *Tripitaka*: in Pali, the *r* was assimilated to the preceding *t*.

[5] The Pali word *sutta* shows the same assimilation as *Tipitaka*, in comparison with the Sanskrit form *sûtra*, meaning either a Hindu aphoristic doctrinal summary or (in the given context) any text traditionally regarded as a discourse of the Buddha.

[6] The town called *Sâvatthi* in Pali, *Śrâvastî* in Sanskrit, was located on the bank of the Râpti River in North Eastern Uttar Pradesh, near today's Balrampur at the Indian-Nepalese border. There was a junction of great roads connecting it with different parts of India. Jetavana monastery in a garden outside Sâvatthi was presented to the Buddha by Anâthapindika, a wealthy banker.

touched. Each blind man claims that only his opinion is true and all the other ones are false. Finally, they start to fight one against the other and the King is highly delighted.

This first version of the elephant exemplum is pitiless. It describes a mere laboratory situation, where the King already knows the end in advance and fools the blind men. They do not show any interest of their own in knowing the elephant; they are forced by royal order. The attitude towards the blind men and their way of cognition is despicable. As they are not able to gain any insight that their knowledge is only partial, they cannot make any cognitive progress and harmonize their conflicting, mono-perspective views. Multi- / omni-perspective cognition is confined to the King. The aim of this version is to rigorously point out an unbridgeable opposition between the stupid blind men and the wise King and the corresponding ways of cognition and forms of knowledge. An explicit internal moral is not stated.

After having told the exemplary story, the Buddha applies it to the monks' question and compares the disputes of the blind men with those of the non-Buddhist philosophers and presents an external moral in the form of the final *udâna*:

"In such points Brahmans and recluses stick
Wrangling on them, they violently discuss –
Poor folk! they see but one side of the shield!"
(Davids 1899: I 188)

In order to explain the elephant exemplum's importance within the framework of Buddhism, we summarize the interpretation in Davids 1899: I 186-188. From a Buddhist point of view, the questions discussed by the non-Buddhist philosophers and theologians are Indeterminates (*Avyâkatâni*); original primitive Buddhism does not express any opinion on them. In Buddhist scriptures, this position is so often referred to that it undoubtedly was an important item in the Buddha's actual belief. To discuss such questions is considered to be mere speculation, useless, because based on insufficient evidence. Therefore, the Buddhist rejects discussing them at all. Any opinion on them cannot be more than a private, individual speculation, not worth talking about. The ethical corollary is insisted upon very emphatically: these speculations are not only useless, but wrong, as they lead to sorrow, wrangling and the fever of excitement, and not to detachment of heart, tranquility and wisdom. Therefore, they are a disadvantage in the struggle towards the only aim worth striving for, namely to become holy (*arhat*).

According to Chavannes 1910-1934: I i-iv, there is a selected Chinese translation of the *Tipitaka* from about 250 AD, confined to the anecdotic stories and omitting the metaphysic discussions. It comprises the two books *Lieou tou tsi king* ('collection of the sutras on the six virtues') and *Kieou tsa p'i yu king* ('ancient book of various apologues ("moral fables")') and was done by Seng-houei, who died in 280 AD. The elephant exemplum can be found there in the

form of the *sutra* of king *Âdarçamukha* (Mirror Face). Besides the explicit internal moral quoted in 0.2, the Chinese version does not show any significant changes compared with the original. We therefore do not discuss it and just reproduce Chavannes's French text in 4.1.2.

What is interesting, however, is the curriculum vitae of the translator, which shows the cultural contacts and interrelations in the third century AD and thus leads to our next chapter (1.2), the reception of the elephant exemplum in the Islamic literature. Seng-houei was of Sogdian descent, that is, his ancestors came from the ancient Sogdiana[7]. His father had emigrated with his family to Tong-king (Ton-kin), the area around Hanoi in today's Vietnam. Seng-houei himself then worked as a proselytical, passionate apostle of Buddhism at the royal court of Nanking (modern spelling: Nanjing) in China from 247 AD on.

[7] Sogdiana is the region between the rivers Amu-Darya (ancient Oxus) and Syr-Darya (ancient Iaxartes), in today's Uzbekistan, with the capital Samarkand. The extinct Sogdian language spoken there at Seng-Houei's time belongs to the Iranian language family closely related to the Indic language family (with e.g. Sanskrit and Pali). Sogdian texts represent Manichaean, Christian and Buddhist religious literature of the 8th and 9th century.

# 1.2 Islamic-Sufic literature

The elephant exemplum occurs again in Sūfī[8] literature more than thousand years later. The Islamic tradition in Eastern Persia, where the elephant was not known, undoubtedly received it indirectly from centers of Buddhist culture in India (Zieseniss 1945: 271), where the elephant was well known. However, neither the date nor the means of transmission can be established precisely. Already at the beginning of the 20th century, Thomas William Rhys Davids had asked for a detailed discussion of the connection (Davids 1911: 201). Up until now, only Zieseniss's research paper from 1945 has dealt with this issue.

It remains a historical mystery when Islam made use of the elephant exemplum for the first time[9]. The transfer was certainly earlier than the first record in the 11th century (see below) and dates back to the rising close contacts to Buddhism during the extension of Islam from the 7th century on.

With regard to possible ways, Zieseniss (1945: 272) proposes two variants. There is a short way via the areas between India and Persia, that is, Afghanistan, after the introduction of Islam in the 8th century. Annemarie Schimmel states in Boyle 1976: ix that Buddhist monks once lived in Balkh and the surrounding province. This town in Afghanistan later was Sanai's and Rumi's (see below) place of birth. The longer way leads via the close cultural and economic contacts between peoples in Central Asia, represented by the flourishing centers of cultural exchange around the trading posts along the Silk Road: Sogdiana[10], with the towns of Samarkand and Bukhara[11], as well as Khorasmia[12], with the towns of Biruni, Kath, Khiva and Urgenč.

---

[8] Sufism is the movement of Islamic mysticism, dating from the 8th century and developed first in Mesopotamia, then chiefly in Persia. Its name is probably due to the woolen garments of its members. Its reasons came from within Islam; Christian and Buddhist influences are supposed to have been only marginal. Nicholson underlines the inspiring effect of Sufism on Persian poetry: "Drawing inspiration from the religious philosophy of the Sūfīs, it seeks to shadow forth, in beautiful symbolic imagery, the emanation of all things from God and their ultimate re-union with Him, the longing of the mystic lover for the Beloved, his inward purification and transformation through suffering, his ecstasies and despairs" (Nicholson 1931: xiii).

[9] www.sufi.it ascribes the elephant exemplum to Hamdûn (the dyer) bin Ahmad bin Umâra Abû Sâlik al-Kassâr, a celebrated Sufi, who lived in Neyshâbûr (Nishapur) near the Iran-Turkmen border and died there in 884. This statement cannot be proved, as the text quoted completely coincides with Sanai's version (cf.1.2.2) and as the authors of this site base their reference on Attar's *Ilahi-Nama* where the elephant exemplum cannot be found using John Andrew Boyle's complete English translation (1976). The Persian Farîd al-Dîn Muhammad bin Ibrâhîm 'Attâr was one of the greatest Muslim mystical poets and thinkers, also a pharmacist and doctor according to his epithet. He lived in Nishapur in the 12th century and died around 1200 / 1220. Among several epic works, there is the *Ilahi-Nama'* 'Divine book': a king tries to draw his six sons away from their worldly desires and to inspire them with higher aims. This main story is interspersed with numerous subsidiary tales.

[10] See note 7.

[11] Bukhara's Iranian population probably was under a Sogdian or Buddhist government during the first centuries AD, but reliable records do not start before the Arab conquest around 712. From 875 on, Bukhara was the center of the flourishing Islamic-Newpersian culture under Samanid government, until it was destroyed by Genghis Khan in 1220.

In this chapter, we will be following the development of the elephant exemplum in the Persian Sufi tradition along the descending teacher-disciple row from Gazzali (first known reference in Islam) in the 11th century (1.2.1) via Sanai in the 12th (1.2.2) to Rumi (1.2.3) and Nasafi (1.2.4) in the 13th.

In order to facilitate these theologians' historical positioning and to show the high level of medieval Islamic thinking, we give some synoptic context by mentioning three medieval Arab scholars who are well-known in the Western world.

Three centuries before Gazzali, the Persian Abû Dja'far Mohammed bin Mûsâ al-Kh(w)ârazmî or al-Kh(u)wârizmî or al-Khorezmi (?780-?850) worked as a mathematician, an astronomer and a geographer in Baghdad. Very little is known about his biography. His *nisba* ('epithet') suggests that he had some relation to the province of Kh(w)ârazm (Khorasmia); perhaps his family came from there. Al-Khwarizmi introduced the digit zero from Indian mathematics. His Latinized name is the origin of the word 'algorithm' for a complex formal procedure. The title of his book on quadratic equations, *Al-Jabr wal-muqâbalah* 'Algebra and the corresponding', gave rise to the name of the mathematical discipline 'algebra'.

Eighty years before Gazzali, the famous Arab philosopher and physician Avicenna[13] (Latinized name) lived – fleeing from the orthodox Muslim government of Mahmud of Ghazna (or Ghazni in Afghanistan) – in Isfahan and Hamadan in Persia, where he died in 1037. He was born in Bukhara in 980.

Immediately after Gazzali, the Spanish-born Arab philosopher and physician Averroes[14] (Latinized name) lived in Córdoba. He was born there in 1126 and died in Morocco in 1198. In his 'Destruction of the destruction', he averted Gazzali's theological attacks against philosophy.

[12] Kh(w)ârazm is the region on today's Uzbek-Turkmen border at the lower course of the Amû-Daryâ near the Aral Sea. It was at that time called Khwârazm by the Iranian inhabitants, Khorasmia by the Greeks and Khwârezm by the Arabs who conquered the area around 712.

[13] Avicenna's full Arabic name was Abu Ali al-Husain ibn Abdallah ibn al-Hasan ibn Sina, his Latinized name based on the last two parts.

[14] His Arabic name was Ibn Roschd.

### 1.2.1 Gazzali

Gazzali[15] wrote his two main works in Arabic. In the first one (1097), entitled *Tehafot al-falasifa* 'Destruction of the philosophers', he fought against a reconciliation between Islam and Greek philosophy, provoking Averroes to the reply some decades later as mentioned above in 1.2. The second one (1102), *Ihyâ ulûm al-dîn* 'Revival of the religious sciences', aims at the liberation of Islam from dogmatic formalism and its deepening by spiritual, mystic cognition with the heart. The elephant exemplum occurs in the forth book of the *Ihya*, the *Kitâb al-tawba* 'book of the expiation':

> There is a community of blind men who have heard that an elephant had been brought into the country. Some of them want to find out more about the unknown animal. Each one touches another part of the elephant. Returned home, they tell their fellow citizens their opinions. Thus, the different conceptions come into contact with one another and it becomes evident that they are contradictory.
>
> In the end, the following internal moral is stated: "Every one of these persons spoke the truth in a way, since he described the qualities of the elephant so far as his knowledge of it reached; yet the whole party failed to comprehend the real form of the elephant" (Nicholson 1925-40: VIII 34).

Unlike in the Buddhist version, there is no king who gives an order. It is the wish of the blind men themselves to learn something about the elephant, additionally triggered by the curiosity to touch the "extraordinary beast". The attitude towards the blind men is negative. As they are not able to gain any insight that their knowledge is only partial, they cannot make any cognitive progress and harmonize their conflicting, mono-perspective views.

With regard to those, there is a remarkable particularity which cannot be found again before Kazantzakis's modern version (1.5.4): two of the opinions mentioned are not completely contradictory, but overlap in some aspects (further discussed in 2.3.5.1):

> The one who had felt the leg maintained that the elephant was nothing other than a pillar, extremely rough to the touch, and yet strangely soft … The third, who had held the ear in his hands, spoke: "By my faith, it is

[15] Gazzali was an Arab theologian and reformer of Persian descent. His full Arabic name was Abu-Hamid Muhammad ibn-Muhammad al-Gazzâlî, in older Western literature partly quoted as Algazel or Ghazâlî. Born in 1059 in Tus in Persia, near Meshed / Mashhad on today's Iranian-Turkmen border, he went to Baghdad as a professor of law. After his conversion to mysticism, he retired into religious seclusion for eleven years in Damascus and Jerusalem, then returned home to Tus, where he died in 1111. "Gazzali was a practical mystic. His aim was to make men better by leading them from a merely notional acquiescence in the stereotyped creed of Islam to a real knowledge of God" (Field 1910: 8). He succeeded in including the essential ideas of Sufism into the system of Sunnitic orthodoxy.

both soft and rough." Thus he agreed with one of the others, but went on to say: "Nevertheless, it is neither like a post nor a pillar, but like a broad, thick piece of leather." (Meier 1954: 167 f.)

The elephant exemplum is transferred to metaphysical questions: "Now consider this parable carefully, for it illustrates the nature of most of our (religious) controversies" (Nicholson 1925-40: VIII 34). Nicholson discusses the cultural context: "Ghazálí tells the story in reply to criticism of his view that there is no *fundamental* contradiction between the doctrines of *jabr* (necessity) and *kasb* (freewill)" (Nicholson 1925-40: VIII 34). According to Obermann 1921: 211, Gazzali tries to defend his own theory of the compatibility of the Islamic doctrine of a universal monotheism and the postulate of individual liberty. His theory is in sharp conflict to all the other Islamic sects which consider the two opposite qualities as incompatible and therefore wrangle about whether to drop the former or the latter. Gazzali demonstrates that the type of response depends on the level of knowledge / cognition the answering person possesses. The treatment of a question from a restricted, low level of knowledge (sensual cognition) leads to contradictory answers. In this respect, such persons behave like blind people. Those persons, however, who possess an advanced, higher level of knowledge (mystic cognition) can expose the contradictions as only seeming, but in fact compatible, and give integrative answers. More details can be found in Meier 1954: 166 f.

In accordance with the rising importance of the Persian language (the later theologians Sanai and Rumi wrote only in Persian), Gazzali published a Persian abstract with the Arabic title *Kimiya'e Saadat* 'The alchemy of happiness' to his Arabic *Ihya* (Field 1910: 13). Chapter 2 (The knowledge of God) contains the elephant exemplum in a very short four-line version, which we only quote for completeness in 4.2.1.2. It is applied to a criticism of methods of natural sciences.

### 1.2.2 Sanai

Sanai's[16] work written in Persian[17] "consists of seven *mathnawîs* and a *dîwân*" (Browne 1906: II 318). The former means 'poems in rhymed couplets', the latter a 'collection of enthusiastic or praising poems'. One of Sanai's *mathnawîs* is

[16] Very little is known about Sanai's life, not even exact dates and places of birth and death. He is assumed to be born in Ghazna or Balkh in Afghanistan, where he probably died between 1131 and 1150. His complete name was Hakîm Abu'l-Majd Majdûd bin Âdam Sanâ'î, Hakîm being a title and Sanâ'î an epithet.

[17] Nicholson states the importance of Islamic literature in the Persian language after the conquest of Persia by the Arabs: "Of this literature the best part, in every meaning of the phrase, was composed by poets; and for a thousand years Persian poetry has been the chief interpreter of Persian thought to other peoples, both in the East and the West ... Besides epic, romance, panegyric, and epigram, there was another type of poetry – the mystical and ethical – which had been gaining ground from the eleventh century onwards" (Nicholson 1931: xi f.).

entitled *Hadîqat al-haqîqat* 'The walled garden of the truth'. "The *Hadíqat*, dedicated to Bahrámsháh, Sultán of Ghazna, is a moral and ethical rather than purely mystical poem of about eleven thousand verses, divided into ten books, the first in praise of God" (Browne 1906: II 318). There, we find the elephant exemplum:

> A king passes by a city with only blind population. His elephant attracts the attention of the inhabitants. Some blind men want to find out more about the unknown animal. Each one touches another part of the elephant. Returned home, they tell their fellow citizens their opinions. Thus, the different conceptions come into contact with one another and it becomes evident that they are contradictory.
>
> In the end, the following internal moral is stated: "Every one had seen some one of its parts, and all had seen it wrongly. No mind knew the whole, – knowledge is never the companion of the blind; all, like fools deceived, fancied absurdities" (Stephenson 1910: 13).

Compared with Gazzali, Sanai's version does not contain any essential differences, only two additions. The town of merely blind people is situated in Ghur (or Ghor), a mountain region between Harat and Ghazna in Afghanistan. As in the Buddhist version, there is a king again, but with a completely different function; he does not give an order, but works like an attribute of the elephant, thus making this royal, "large and magnificent" animal even more attractive for the blind men, whose own wish it is to learn something about it. The attitude towards the blind men is negative, as in Gazzali's version. As they are not able to gain any insight that their knowledge is only partial, they cannot make any cognitive progress and harmonize their conflicting, mono-perspective views.

The external moral runs: "The created is not informed about divinity. There is no Way in this science by means of the ordinary intellect" (Shah 1967: 25). With regard to the application of the elephant exemplum, we see differences to Gazzali. The question leading to contradictory answers is no longer the compatibility of necessity and freewill, as in Gazzali's version, but the more general question of the nature of God. Sanai does not make any difference with regard to the level of knowledge of the answering person, but simply states the limits of human intellectual cognition which is only able to perceive one aspect of a religious object (imperceptible to the senses) at a time. The elephant exemplum illustrates "the impossibility that man should be able to form more than a partial and distorted conception of God" (Browne 1906: II 319).

### 1.2.3 Rumi

Rumi's[18] main work is the *Mathnawî* ('poems in rhymed couplets', other spellings *Masnavi*, *Mesnevi*), the name of a poetic form used as title. This text, often called the *Koran of Persia*, "belongs to the last period of his life ... Its six books were composed at intervals during approximately fifteen years" (Nicholson 1931: xviii). It "is a grand Story-book. There are several hundreds of stories, comprising specimens in almost every *genre*" (Nicholson 1931: xxiii). The elephant exemplum can be found in its book III:

> Some people try to figure out what an elephant is like. They are not blind, the elephant, however, is in a dark house, so dark that it cannot be seen with the eyes, but only touched with the hands. Depending on the part they touched, the well-known different opinions arise.
>
> The internal moral runs: "If there had been a candle in each one's hand, the difference would have gone out of their words … The palm has not power to reach the whole of him (the elephant)" (Nicholson 1925-40: IV 72, v. 1268-1269).

The elephant exemplum appears in a new shape with a completely new internal moral. "The chief difference is that while Saná'í and Ghazálí describe the people who handled the elephant as blind (*'umyán*), Rúmí says they could not see it because of the darkness of the place in which it was exhibited" (Nicholson 1925-1940: VIII 34). The permanent blindness in all the preceding versions is replaced by a temporary blindness. Symbolizing the key to finish blindness with a mere candle and not with any complex instrument, Rumi is the first to describe it as accessible to everyone, that is, he takes an enlightenment-like view. With this tool, the "blind" men can make great progress towards multi-perspective cognition. They are able to gain insight that their knowledge is only partial and to harmonize their conflicting, mono-perspective views. As a viable way out of blindness exists, the attitude towards the "blind" men is no longer negative.

Rumi applies the elephant exemplum to the cognition of God: "The eye of sense-perception is only like the palm of the hand … The eye of Sea (i.e. eye of reality) is one thing, and the foam (i.e. phenomena) another: leave the foam and look with the eye of the Sea" (Nicholson 1925-40: IV 72, v. 1269-1270). Rumi states that sensory and mental perception lead to conflicting opinions on God; for this reason, they have to be replaced by mystic perception. "Religions are many, but God is One. The intellect, groping in the dark, cannot form any true conception of His nature. Only the clairvoyant eye of the mystic sees Him as he really is" (Nicholson 1931: 111). The mystic recognizes "'with the eye of

[18] Jalâl-al-Dîn Rûmî (other spellings Jalâl-ud-Dîn or Jalâlu'ddîn) was born in Balkh in Afghanistan, the family being allied with the royal house of Khwârasm. The monarch's change from Sunni to Shiah forced Rumi's father to leave Balkh very early (~1220). After some years of exile, the family finally settled in Qôniya (Latin Iconium, today's Turkish Konya) in Rûm (Asia Minor) where Rumi died in 1273. The name of his new home was the origin of his *nisba* 'epithet' Rumi (Nicholson 1931: xv f.). Rumi founded the Mevlevî Order of Dervishes "with their tall drab-colored felt hats and wide cloaks, their reed-flutes and rebecks, and their whirling dance" (Nicholson 1931: xvi).

certainty' that there is no 'other' [sc. God] and that the Truth is essentially One" (Nicholson 1931: xiii). The candle symbolizes the access to spiritual, mystic perception and cognition.

Rumi's own concept of God demonstrates the unification of intellectual opposites in a comprehensive mystic view: "He may be called a Pantheist, with the reservation that at times he uses language inconsistent with Pantheism and implying belief in a personal God: he seems to have held the one and the other view as higher and lower aspects of the same Truth. The full pantheistic doctrine is for the spiritually perfect, not for the self-indulgent who draw immoral inferences from it ... the poet shows that all partial evil is universal good; that the antithesis of freedom and necessity disappears in harmony of will; and that a religious faith resting on conventional beliefs or intellectual evidences has no value whatever" (Nicholson 1931: xx f.).

### 1.2.4 Nasafi

In 1285, Nasafi[19] wrote a synopsis to the law book *Kitâb al-Wâfî* 'The comprehensive book'. It was called Kashf al-haqâ'iq 'The unveiling of realities' or *Kanz al-haqâ'iq* 'The treasure of realities / truths'. The elephant exemplum can be found there in a basic and an extended version which will be quoted as *Kashf* 1 and *Kashf* 2 in 2.2:

> A caravan with an elephant arrives at a city of blind people only. They are curious to know something about this animal. A delegation of the wisest and most intelligent men goes out to the caravan and each one touches another part of the elephant. Returned home, they tell their fellow citizens their opinions. Thus, the different conceptions come into contact with one another and it becomes evident that they are contradictory. The usage of so-called proofs does not lead any further.
>
> Nasafi states a first internal moral: "They can never arrive at the object of their demonstrations, the elephant, and consequently the conflict in opinions will never be relieved" (Meier 1954: 164).
>
> The story is continued with Nasafi's (the narrator's) hypothesis that one of the blind men is made seeing and perceives the elephant as it really is.
>
> A second internal moral is stated: "Only some few accept the word of the seer … The others persist in their stupidity coupled with arrogance and refuse to be instructed" (Meier 1954: 164).

The basic version does not show any difference worth mentioning in comparison with Gazzali and Sanai. The extended one underlines how difficult it is for the blind men to become aware of the mono-perspectivity of their cognition and the

[19] Hâfiz al-Dîn Abu l-Barakât 'Abd Allâh bin Ahmad bin Mahmûd i-Nasafi (d. 1310) was a Persian legist and mystic theologian from Nasaf in the environs of Buchara in today's Uzbekistan.

partiality of their knowledge. Therefore, the attitude towards the blind men largely remains negative. Only very few are able to gain insight that their knowledge is only partial. Only they can make cognitive progress and harmonize their former conflicting, mono-perspective views.

The blind men symbolize the theologians and exoteric thinkers, while the elephant represents God or the truth "Thus, according to Nasafi, theologians (and exoteric thinkers in general) are men who have grasped only a part of the object of their study, and, not content with partial knowledge, have gone on to represent this part as the whole. Since the whole consists of different parts, the result is bound to be false and one-sided; and moreover, each result, according to the part on which it was based, is different and each contradicts the others. The battle of theological opinions can therefore be arbitrated only by one who knows the relation between the parts, and that is the esoteric seer who, by following the method indicated by Nasafi, has preserved or acquired an ability to see the whole" (Meier 1954: 163).

Another basic and extended version can be found in Nasafi's commentary on the *Koran* (*Qur'ân*) called *Tanzîl al-arwâh* 'Sending down the souls' or *Madârik al-tanzîl wa haqâ'iq al-ta'wîl* 'The intellectual faculties of sending down and the truths of the original interpretation'. They will be quoted as *Tanzil* 1 and *Tanzil* 2 in 2.2:

> "The legend is related in almost literally the same version …, but with the difference that here the appearance of the seer is part of the legend and is narrated in the past" (Meier 1954: 165, note 40).

Nasafi's external moral runs: "This story refers to those men who, in dealing with the intelligible world, proceed by rational thought and demonstrations; for reason has different stages, and the wisdom that lies in things is infinite and unfathomable. But it applies also to those of supersensory perception and sight, in their dealing with the object of supersensory perception [*makshūfāt*]; for supersensory perception also has stages, and God's self-revelation in things is infinite and unfathomable. Of a hundred thousand who enter upon this path, one attains to the goal and experiences grace. All others remain at the way stations and take the way station for the goal" (Meier 1954: 165, note 40).

With regard to this external moral, Meier comments that "it should be remarked that in Tanzīl the legend is differently interpreted than in Kashf. In this version, surprisingly, blindness is related also to the esoteric: for just as the knowledge of the exoteric thinker can always be extended by new insights, the knowledge of the esoteric seer can always be surpassed by higher knowledge" (Meier 1954: 165, note 40).

From this application of the elephant exemplum, a different internal moral can be reconstructed: the way out of blindness is not one giant leap to multi-perspectivity. This way must be traveled in many stages, slowly leading from mono-perspectivity to multi-perspectivity. This highly differentiated view will be very important in our discussion of epistemological implications in 2.3, especially in 2.3.3.

# 1.3 Hindu and Indic literature

It is not known when Hinduism first made use of the elephant exemplum. The doctrine, which it illustrates in later Hindu sources, can already be found in the *Rig Veda* ('Veda of verses'), dating from about 1000 (± 300) BC. It is the oldest of the four parts of the *Veda*[20]. The *samhitâ* 'collection' of the *Rig Veda* contains 1028 *mantras* 'hymns', arranged in 10 *mandalas* 'books'. Book 1, hymn 164, verse 46 represents an intra-religious Hindu monotheism:

> "They call him Indra, Mitra, Varûna, Agni,
> and he is heavenly nobly-winged Garutmân.
> To what is one, sages give many a title:
> they call it Agni, Yama, Mâtarisvan."
> (Griffith 1889: I 227)

The names of different Hindu gods are interpreted as different names of one single God. This idea is extended in later Hindu sources to the meta-religious approach of an inter-religious monotheism in Ramakrishna's philosophy (1.3.2) and similarly in Robinson's second quotation (1.3.3).

According to its advocates, the monotheistic doctrine above can only be achieved with mystic cognition of God. Therefore, it is based upon a second doctrine: the consideration that God is not accessible to human mental cognition, but only to spiritual experience. This idea, which the elephant exemplum later illustrates too, can also already be found in the *Veda*, namely in the *Upanishads* ('secret philosophical treatises'). The relevant passage is from the *Sâma Veda* ('Veda of songs') and within that from the *Kena Upanishad*[21]. The text in the second *Khanda* 'section', nr. 3, is as follows:

> "He by whom it (Brahman) is not thought, by him it is thought;
> he by whom it is thought, knows it not.
> It is not understood by those who understand it,
> it is understood by those who do not understand it."
> (Müller 1879: I 149)

The elephant exemplum itself seems to have been introduced as a later illustration of both of the doctrines, just as, in the Buddhist *udana*, the introductory story containing the elephant exemplum is supposed to be younger than the final solemn utterance containing the essential idea in the form of an external moral.

All of the Hindu versions are oriented towards the cognition of God, who shows different faces to mental cognition and only one face to spiritual

---

[20] The *Veda* ('knowledge') is a collective term for the oldest sacred writings of the Indo-European population of India including the psalms, incantations, hymns and formulas of worship. Hindus consider them as eternal. The language used is the oldest level of Ancient Indic, i.e. to be categorized before classical Sanskrit.

[21] so called according to its first word *kena* 'by which', other names *Talavakâra* or *Jaiminîya*.

cognition. In this chapter, we will examine five variants: the Shivaist version from around 850-1000 AD (1.3.1), Ramakrishna's from 1883 (1.3.2), two quotations by Robinson in 1885 (1.3.3) and one by Shyama Shankar in 1924 (1.3.4).

### 1.3.1 Old Javanese Shivaism

The admirers and worshippers of Shiva, the god of destruction and reproduction, a member of the Hindu triad along with Brahma and Vishnu, are called Shaivas; their doctrine is called Shivaism. The first record of the elephant exemplum in Hinduism can be found in an early text of the Shaiva doctrinal system (*Śaivasiddhānta*), the *Vrhaspatitatva*[22]. This work is handed down in Old Javanese literature in the form of a skeleton of 84 Sanskrit verses, with Old Javanese paraphrases and continuations. It dates back to around 1000 AD, its probable Sanskrit basis to around 850 AD.

The purpose of the introduction to the *Vrhaspatitatva* is to explain that the three Shivaist doctrines have to be considered as aspects of a higher unity (Zieseniss 1945: 268; Zieseniss 1936: II 1 and 319). In a fictive conversation between a teacher and his disciple on the summit of the holy mountain Kailāsa in heaven, Bhagavān Vrhaspati, an ascetic, is instructed by Shiva himself, incarnated as Bhatāra Iśvara (Zieseniss 1936: I 71). Vrhaspati asks and Bhatāra answers, using the elephant exemplum for illustration:

> Blind men full of interest in the elephant ask seeing people to let them touch it. Depending on the part they touched, the well-known conflicting opinions arise.
>
> The internal moral runs: "They did not learn anything about what the elephant looks like, nothing about its size, shape, faculty and way of behavior. Only the parts touched by them were the object of their knowledge" (Zieseniss 1936: I 75 translated by AH).

This traditional version does not contain any particularities. The attitude towards the blind men is negative. As they are not able to gain any insight that their knowledge is only partial; they cannot make any cognitive progress and harmonize their conflicting, mono-perspective views.

The analogical transfer to the application area is made explicit: "The entire body of the elephant designates the internal content of truth. Head, tusk, trunk, belly and foot are compared to books and doctrines" (Zieseniss 1936: I 75 translated by AH). "There are many religious doctrines; all of them are inspired with the holy truth (that is they contain a part or an aspect of the supreme truth) and, therefore, cause deep confusion (if one does not recognize the imperfection of the responsible scholars)" (Zieseniss 1945: 269 translated by AH).

---

[22] The title *Vrhaspatitatva* is composed of two parts: *Vrhaspati* is a name and, in book titles, *-tatva* means 'prose text' in Old Javanese or 'outline of a larger work' in Sanskrit (Zieseniss 1936: II 1).

### 1.3.2 Sri Ramakrishna

The origins of Ramakrishnas[23] thinking lie in Shankara's (788-820) Vedanta philosophy: the Vedanta is a spiritualistic monism, based on the *Upanishads* at the end (*anta*) of the *Veda*. Ramakrishna had a close relation to other religions as well. In 1866, he practiced the disciplines of Islam and, eight years later, he learnt the doctrines of the Christian religion. He also accepted the divinity of the Buddha (Nikhilananda 1942: 33 f.).

Ramakrishna did not write any books by himself. His disciple Mahendranath Gupta handed down the doctrine over four years in the form of a diary, called *Sri Sri Ramakrishna Kathāmrita*. This collection contains lots of conversations between Ramakrishna and his devotees. The English translation *The gospel of Sri Ramakrishna* by Swami Nikhilananda was first published in 1942.

In this book, Ramakrishna is reported to have told the elephant exemplum on the occasion of his birthday on March 11, 1883 (Nikhilananda 1942: 186). The version is very short:

> Some blind men happen to come by an elephant and are asked what this animal is like. They touch its different parts and get different impressions.
>
> The internal moral is reduced to: "They gave their different versions of the elephant" (Nikhilananda 1942: 191).

Ramakrishna's version is very close to the Buddhist one, although there is no king executing an experiment. Nevertheless, the blind men are not ascribed any cognitive interest of their own. They are just asked to examine the elephant. The attitude towards the blind men is negative, and a way out of their conflicting opinions is not shown.

The external moral refers to God as an object of limited human cognition: "Just so, a man who has seen only one aspect of God limits God to that alone. It is his conviction that God cannot be anything else." (Nikhilananda 1942: 191) Ramakrishna identifies the blind men of the elephant exemplum with dogmatists of various religions and states the independence of God beyond and the accessibility of God through any religion: "With sincerity and earnestness one can realize God through all religions ... The Mussalmāns and Christians will realize Him too ... The dogmatist says, 'My religion alone is true, and the religions of others are false.' This is a bad attitude. God can be reached by different paths" (Nikhilananda 1942: 191).

---

[23] Born in Kamarpukur near Calcutta in 1834 or 1836, Ramakrishna was given the name Gadadhar. He was descended from a poor Brahman family, moved to Calcutta in 1852 where he was appointed preast of the Hindu goddess Kāli at the temple of Dakshineswar north of Calcutta. From about 1880, he assembled disciples around him and became a famous Hindu mystic and ascetic. He died in Cassipore near Calcutta in 1886. Modern orders still spread his doctrine.

### 1.3.3 Versions reported by Robinson

Under the headline *Blind religion*, Robinson 1885: 29 f. reports two versions of the elephant exemplum from Madras in South India.

The first one is written in prose:

> Blind people full of interest for the elephant ask an elephant-driver to let them touch it. Depending on the part they touched, the well-known conflicting opinions arise.
>
> The internal moral is reduced to: "Thus answering one another, they quarreled till they parted."

We encounter a standard version which does not show any particularities.

The internal moral is transferred to the external one that "sectaries … dispute about the nature of God which the mind cannot reach."

The second version is translated from Pattanattu[24] in poetic form by a certain Mr. Gover:

> Six blind men describe an elephant each of them touching another part.
>
> The internal moral runs: "From what each learned, he drew the beast.
> Six monsters stood revealed."

This version is very short. The trigger of the cognitive process is missing as well as the quarrel in the end. It is true that the version enumerates the parts touched by the blind men, but it does not mention the objects of comparison. A way out of blindness is not shown.

The number 'six' shows up again in the external moral, where the six blind men are compared to the six religions. It is similar to Ramakrishna's; it is worded in more detail than the rest: "Just so the six religions learned of God, and tell their wondrous tales. Our God is One." God is not accessible to human sensory perception; therefore, the six religions have different concepts of God.

### 1.3.4 Version reported by Shyama-Shankar

Under the headline *The blind lead the blind*, Shyama-Shankar 1924: 153 f. reports a version from the Ganges valley:

> Four blind men ask the rider of an elephant to let them touch the animal. The well known conflicting opinions lead to a serious dispute. A wise man hears the quarrels, and tells the blind men the solution to their problem in the words of an internal moral:
>
> "You are all right and you are all wrong. When the first man says that the elephant is like a log, he means only the leg of the animal, the second man's rope represents its tail, the fan of the third man answers to its ear,

[24] Pattan is a town in the state of Bombay, a center of Jaina Buddhism with many temples and libraries of manuscripts.

and the fourth man is evidently describing its body. So you see you have only had the knowledge of *parts*, but you are disputing about the *whole*."

We encountered a seeing man already in Nasafi's extended versions. In contrast to Nasafi, the seeing wise man is not one of the blind men who is made seeing, but an external person not involved in the cognitive process. Whether the blind men learn something from the seeing man's explanation is not explicitly mentioned. Seemingly, it does not play any role for the narrator whether the blind men can leave the state of blindness and arrive at multi-perspective cognition. The rest of the version does not contain anything particular.

As with the internal one, the external moral is also pronounced by the wise man: "We are all blind in matters of religious truths, yet we would seek to lead others in realising the Grand Mysterious Being."

# 1.4 Literature of the Christian Middle Ages

The elephant exemplum only appears relatively late in Western culture. A parallel to its course of events cannot be found in Classical Antiquity, in the works of fable poets, such as Aesop and Phaedrus. The first records are Saxe and Tolstoy (see 1.5) at the end of the 19th century, in the context of a rising interest for Indic language and culture. As far as we know, it is not even recorded in the Christian Middle Ages, where exempla in general were a very important text type. Main sources for possible parallels, such as the Physiologus and Geoffrey Chaucer, do not contain any references.

We will now offer a brief outline of medieval thinking in order to explain why the elephant exemplum was not attractive for this culture, independent of a real historical possibility to receive it, such as via Moorish Spain. In order to get some insight into the medieval intellectual world based on Christian religion, we have to discuss thinking patterns completely different from today's.

From this perspective, the entry of mankind into the temporality of history starts with the fall of man (temporality did not exist in paradise). The former unity between creator and creature is broken. God is outside the world of humans, who have lost the direct and automatic contact to their creator when they were expelled from paradise. They are now dependent on their memory of the creator. Under the permanent negative influence of the devil, however, humans run the risk of forgetting God more and more, that is, of attributing to the world a meaning and a value of its own. That is why empiric thinking, which rose centuries later, was at first considered to be induced by the devil.

For Christian medieval epistemology, however, this world does not possess any meaning[25] of its own; every object and every quality in the world has a semiotic relation to God and gets its meaning only from its reference to God. Everything in the world only denotes and the single last denoted instance in every chain of denotations is outside the world, is God. The semiotic relation is not questioned, it is stated as an axiom.

Medieval Christian society considers it an important task to remind people of the world's exclusive reference to God. From this point of view, it is not necessary to prove <u>that</u> there is a reference (this is an axiom), but to constantly demonstrate <u>how</u> this reference can be imagined. This semiotic relation has to be permanently reproduced. In order to fill it with evident content, objects and processes in the world have to be put in relation to God's properties and qualities. Although no one would claim to 'know' God – it is only his inconceivability which can be described intellectually –, medieval Christianity is not agnostic. The Bible is used as an encyclopedia of God's properties. Before this background, a mental work can now start which reminds us of an intellectual game when regarded from a point of view of today. It constructs longer and

[25] In structural linguistics (Ferdinand de Saussure), a sign consists of a signifying, denoting part (form, French *signifiant*) and a signified, denoted part (meaning, *signifié*).

shorter chains of associations based on formal and mnemonic similarities. Whether they are weak or strong is not important; the essential point is that the semiotic relation between the world and God is illustrated. We quote an example: the lion denotes God; when it sleeps, its eyes sleep. God informs about himself in King Solomon's High Hymn (*canticum canticorum* Ct 5,2): "I am sleeping and my heart is awake (*ego dormio et cor meum vigilat*)."

As everything in the world refers to God, the way to God in itself is a multi-perspective way. Under these circumstances, contradictory aspects of objects in the world, as outlined in the elephant exemplum, do not play an important role. They do not have any meaning of their own, as the entire world refers to the last denoted instance, to God. It would be difficult to find an interpretation of the elephant exemplum towards God, the more so as exempla are used to illustrate human behavior and to serve catechetical (instructing) purposes and not to demonstrate the cognition of God theologically.

In the Christian Middle Ages, the world is not regarded with the empiric eyes of modern natural sciences. It does not exceed the state of a mere 'model', although medieval epistemology would not put it that way, as a model is only perceivable as such if there is a counterpart. Modeling, the everyday job of today's computer scientists and information systems experts, could not be understood and described in terms of the medieval views outlined above, even less multi-perspective modeling, the object of this research paper.

Although this way of medieval thinking is the historical predecessor of today's Western thinking, it is more distant from us than many of today's cultures, which produce the impression of being strange and far away.

# 1.5 Modern poetry

We are now leaving the eras in history where the elephant exemplum was exclusively used in theological contexts and with an application to metaphysical questions, in particular to the cognition of God.

First, we discuss the two versions of the elephant exemplum from the 19th century: John Godfrey Saxe's poem, which was later used by Paul Galdone for a children's book in 1963 (1.5.1) and Leo Nikolayevich Tolstoy's stereotyped prose text (1.5.2). They are its earliest records in Western culture.

In the 20th (and 21st) century, the elephant exemplum is very popular. There are a lot more quotations with adapted external morals, often spread by otherwise unknown minor authors or just private people via the Internet. Therefore, we confine ourselves to an examination of the versions of three important authors: Carl Sandburg's parody (1.5.3), Nikos Kazantzakis's version embedded in a novel (1.5.4) and Ed Young's children's book *Seven blind mice*, where the elephant exemplum appears in the form of a fable.

## 1.5.1 John Godfrey Saxe

We do not know anything about the sources where Saxe[26] came into contact with the elephant exemplum. It can be found in the Chapter *Fairy tales, legends, and apologues* in his *Poetical works* (Saxe 1882: 111 f). In the title, Saxe calls it a *Hindoo fable*, using the spelling of that time.

> The story runs as usual. Blind men from India want to learn more about an elephant, touch different parts of it and dispute about their different opinions.
>
> The internal moral is formulated explicitly: "Each was partly in the right, and all were in the wrong."

The fact that there are six blind men shows some relation to Robinson 2 (1.3.3) although the comparisons, which are missing in Robinson 2, are now given in detail. Otherwise, Saxe's version does not contain any particularities. The attitude towards the blind men is negative. A chance for some cognitive progress is not shown.

A special application becomes evident from the external moral:

"So oft in theologic wars,
The disputants, I ween,
Rail on in utter ignorance

[26] He was a popular author in the 19th century. Born in Highgate / Vt. in 1816, he worked as poet, newspaper editor and politician. He died in New York in 1887.

Of what each other mean,
*And prate about an Elephant*
*Not one of them has seen!*"

Up until now, we have encountered external morals embedded in religious contexts and with regard to the cognition of God. As a side effect, most of them include a criticism against the 'other' theologians, those who - in contrast to the narrator's conviction - conserve their mono-perspective views and refuse to accept multi-perspective cognition. Saxe exchanges main purpose and minor purpose and primarily aims at a harsh criticism of theologians, whereas he does not deal with the cognition of God, who is not even explicitly mentioned. The issue is not a decision between religions, as in Robinson 2, but a decision against clerical disputants in general, all of whom he implicitly calls blind. It remains open whether Saxe thinks that seeing people exist at all. With regard to theological objects of cognition, he demonstrates the lack of an image produced by sensory perception ("not one of them has seen"), which would for him be the prerequisite for an effective discussion; he implicitly gives the advice to omit discussions ("theologic wars") about such objects as useless. In so far, the elephant exemplum is used for a secularized application.

Saxe's version has also made its entrance in an illustrated children's book: Saxe / Goldone 1963. There and in some reproductions on the Internet, the poem is reduced to the mere exemplum, dropping the external moral with its hard criticism of theologians.

### 1.5.2 Leo Nicolayevich Tolstoy

Tolstoy[27] studied Oriental languages in Kazan (capital of the Tatar Republic on the Volga) from 1844 to 1847. This may explain how he learnt of the elephant exemplum. It can be found in his *Četvertaja russkaja kniga dlja čtenija* '4th Russian book for reading' of his *Povesti i rasskazy r. 1872-1886* 'Novels and stories 1872-1886' (= *Collected works* vol. X). The title is *Car' i slony* 'The emperor and the elephants'.

> An emperor gives order to pick up all the blind men and to show them his elephants. The well-known conflicting opinions arise.
>
> The internal moral is reduced to: "And all the blind men started to argue and to quarrel" (Tolstoy 1963: X 198-199 translated by AH).

Two aspects move Tolstoy's version into the close vicinity of the Buddhist one. It is written in stereotyped phrases, and the blind men do not possess any cognitive interest of their own; they are forced by the emperor - who curiously enough is Indian and not Indic. It is also strange that eight blind men are opposed

[27] Tolstoy was a Russian count, philosopher and novelist (e.g. *War and Peace*). He was born in Jasnaja Poljana (Gouv. Tula) in 1828 and died in Astapowo (Gouv. Tambow) in 1910.

to ten utterances. As usual, the blind men quarrel in the end, but an emotional reaction of the emperor is not mentioned. The attitude towards the blind men is negative. A chance for some cognitive progress is not shown.

There is no transfer to an application area, no external moral, no regard to any object of cognition, neither God nor anything else. Tolstoy's version is even more secularized than Saxe's.

### 1.5.3 Carl Sandburg

The elephant exemplum appears in Sandburg's[28] *Complete poems* (Sandburg 1950: 628 f.) in the form of a parody, under the title *Elephants are different to different people*.

> Three men, Wilson, Pilcer and Snack are looking at an elephant in a zoo. They are asking different questions and giving different comments about it, loudly, murmuring and silently.
>
> The internal moral runs:
>
> "They didn't put up any arguments.
> They didn't throw anything in each other's faces.
> Three men saw the elephant three ways
> And let it go at that.
> They didn't spoil a sunny Sunday afternoon;
> 'Sunday comes only once a week,' they told each other."

Sandberg's version is a parody. The story is transported to Western culture. The three men bear names and are therefore individualized. This is not the case in classical exempla, as individualization would make the transfer to an application more difficult. There are not any blind people, there is not any metaphysics, and there is not any cognitive or epistemological problem, as the questions and considerations by the three men can be called trivial.

Therefore, an external moral is not stated.

### 1.5.4 Nikos Kazantzakis

Kazantzakis's[29] Greek novel *'O Khristòs xanastauróneta*i was first published in 1948, the German translation in 1953, the English translation *The Greek passion / Christ recrucified* in 1954 (according to www.historical-museum.gr /kazantzakis/). The elephant exemplum is quoted in the middle of Chapter 7.

---

[28] Born of Swedish peasant stock in Galesburg / Ill. in 1878, Carl Sandburg later lived in Chicago. He worked as journalist and biographer of Abraham Lincoln, was a popular American poet, collected and sang American folk songs. He died in Flat Rock / N.C. in 1967.

[29] Nikos Kazantzakis was a Greek poet and translator of Dante, Goethe, Nietzsche, Darwin, Rimbaud. He was born in Heraklion (Crete, Greece) in 1882 and died in Freiburg (Germany) in 1957. He traveled to the Soviet Union, to the Orient and to other destinations.

It is embedded in a surrounding story: because Giannakos grumbles loudly about God and the evil in the world, the elephant exemplum is told by the priest Fotis to the four friends Giannakos, Manolios, Kostantis and Michelis, in order to illustrate the difficulties of the cognition of God. The priest reports that he had heard it from an old monk on the holy mountain Athos.

> All of the inhabitants of a city are blind. A king with his army and his enormous elephant passes by. The blind people are curious to learn more about this animal. About ten of them, the notables, ask the king to let them touch the elephant. The well-known conflicting opinions arise.
>
> An internal moral is not stated.

As Kazantzakis mentions a group (delegation) of blind men touching the elephant, his version corresponds to Gazzali, Sanai and Nasafi (basic versions). From an epistemological point of view, there nevertheless are important differences to all of the versions before, except for Gazzali's:

- Overlapping, not only disjoint opinions of the blind men occur: "It is a hairy pillar." – "It is a wall, like a fortress, and it, too, is hairy." The contradiction is not complete, the opinions coincide in their common part, the hairiness. This case can elsewhere only be found in Gazzali's version (cf. 1.2.1; further discussion in 2.3.5.1).

The other differences do not become obvious before the external moral.

Combined with the result of the learning process, the external moral is presented in the surrounding story by the person directly addressed, by Giannakos himself: "The blind people, that's us. We are walking around God's little toe and say: 'God is as hard as a rock.' Why? 'cause we don't get any further."

The analogy between the elephant exemplum and its application in the surrounding story is incomplete. There are inconsistencies between the former and the latter. Nevertheless, it is clear that the narrator's conviction coincides with the one presented in the surrounding story:

- Insight into blindness is the first step out of it. This understanding is relieving, as it helps to recognize partial knowledge as partial and to remove the urges to consider it as complete and absolute. Although multi-perspective cognition is not achieved, mono-perspective cognition is transcended. This aspect is not mentioned in the exemplary story.
- No one can see although, in the exemplary story, the king and his soldiers can see.
- The blind men are compared to likeable modern people, all of whom can reach the awareness of mono-perspectivity, but not multi-perspectivity. In the exemplary story, the attitude towards the blind men is negative; they cannot gain any insight into their way of cognition.

Due to the particularities mentioned above, Kazantzakis's version is very rich from an epistemological point of view. We will refer back to it several times in our epistemological discussion in Chapter 2.

### 1.5.5 Ed Young

*Seven blind mice* is a children's book, with text and illustrations by Ed Young[30]. It was first published in 1992. The elephant exemplum appears in the shape of a fable, where the blind men are replaced by blind mice.

> The seven blind mice are six he-mice and one she-mouse. They find a strange thing, that is, an elephant. On each day from Monday to Saturday, one of the he-mice goes to find out what it is. They come back with conflicting opinions and finally begin to argue.
>
> The internal moral is divided into two parts, the first concerning the she-mouse: on Sunday, White Mouse, the she-mouse, goes and examines the strange thing from different sides, thus harmonizing the different views and finding out that it is an elephant: "Now, I see."
>
> The second part concerns the he-mice: "And when the other mice ran up one side and down the other, across the Something from end to end, they agreed. Now they saw, too."

Young's version is the most optimistic one we encounter and the only one that leads to a happy ending. On the other hand, it is rather trivial and simple from an epistemological point of view. All of the mice have the wish to learn. After one has got full sight, it is easy to convince all the others, who also take the step from mono-perspectivity to multi-perspectivity. This step, as well as the process of convincing the others, is outlined as very simple and not at all differentiated.

The external moral ("Mouse Moral") transfers the elephant exemplum to objects of cognition in general: "Knowing in part may make a fine tale, but wisdom comes from seeing the whole." Metaphysical objects are neither explicitly included nor excluded, so that we can speak of a secularized version again, as in the cases of Saxe, Tolstoy and Sandburg.

With this fable, we conclude our presentation of versions of the elephant exemplum and turn to a discussion of its epistemological implications in the next chapter.

---

[30] Ed (Tse-chun) Young is a children's book author and illustrator. He was born in the Chinese coal-mining town Tsientsin on November 28, 1931, and raised in Shanghai. At the age of 19, he immigrated to the United States where he lives as a naturalized citizen.

# 2. Analysis of the text variants with regard to their epistemological implications

In Chapter 1, the known versions of the elephant exemplum were presented in their cultural context. We will now abstract from them and formulate its generalization, consisting of the generalized story and the generalized moral (moral potential) (2.1). Then we will go back to the versions and give a first epistemological classification (2.2), which will later be restructured (2.3).

## 2.1 The moral potential of the generalization of the elephant exemplum

Using the terminology defined in the introduction (0.2), we will now carve the generalization of the elephant exemplum out of the versions mentioned. This will be done in two steps.

- First, we will reduce the different stories to their common motif complex, which we call the core of the story.
- In the second step, we will abstract from the blind men and the elephant to humans and an object of cognition in general.

Both of the abstraction levels are important for further and deeper epistemological considerations.

For the first step, some basic set theory is required, which is intuitively used in everyday life. We regard each version of our exemplary story as a set of motifs (features). The intersection of these motif sets leads to their common motif set, or common motif complex. Uncommon motifs are considered as accidental. They are left out, for example, whether the examination of the elephant by the blind men is due to their own desire or due to an order. Common

motifs are regarded as essential. They are quoted. The core of the story thus figured out is as follows:

> Some blind men touch different parts of an elephant's body. Each of them gets an individual impression, which he considers as absolute. Once the blind men have been confronted with the others' opinions and have learned that they are different, each one insists on his own opinion, rejects the other ones as wrong and all of the blind men start quarrelling.

Reducing our exemplary story in this way, its corresponding internal moral does not change: the cognitive behavior of the blind men is judged as epistemologically stupid.

The second step leads us to the generalization of the elephant exemplum, its *tertium comparationis* to possible applications. It contains its generalized story and its generalized moral, which determines the potential of all of its possible external morals. In order to find this generalization, we generalize each essential motif (feature) from the core of the story. The frequent philosophical and theological morals of the elephant exemplum are only mentioned to show the relation to the versions in Chapter 1.

- The elephant can be abstracted to an unknown object of cognition in general. In versions in a theological context, we find an analogical transfer to God or essential philosophical questions.
- Touching only one part of the elephant stands for (the restriction to) mono-perspective cognition, a defective, inadequate strategy of cognition. Theological contexts refer to the defects of one-sided intellectual, mental, rational and sensory cognition, in opposition to comprehensive mystic cognition, which leads to all-encompassing knowledge.
- The property of blindness means that the blind men (the subjects of cognition) are not aware of the mono-perspectivity of their strategy of cognition. They do not reflect the conditions of cognition. It is important to state that blindness does not represent mere mono-perspectivity, but unnoticed mono-perspectivity.
- The individual impressions considered as absolute can be generalized to partial knowledge considered as complete and absolute knowledge of an object of cognition. Theological contexts allude to logically inconsistent, one-sided doctrines, which are regarded as the final truth.
- This conviction does not become obvious before the individual opinions are uttered – in statements such as "The elephant is like a pillar" – and communicated to other persons who have different opinions of their own. When the individual statements thus come into contact with one another, their collection turns out to be incompatible and contradictory. Even when the persons are confronted with the existence of different opinions, they do not change their conviction, but rather insist on their own impressions and reject the other views as wrong. Communication is the prerequisite for the manifestation of the contradictions and of the conviction that one's own knowledge is complete and absolute.

- The final disputing, arguing and quarrelling shows that partial knowledge (such as mono-perspective views) taken as complete and absolute is useless and even detrimental, as it does not lead to more precise and deeper knowledge.

On the basis of the preceding discussion, we outline the generalization of the elephant exemplum.

The generalized story can be formulated as follows:

> Independently of each other, some persons acquire individual partial knowledge about an object of cognition and consider it as complete and absolute knowledge. Even when they are confronted with different opinions, each one insists on his own opinion, rejects the other ones as wrong and all of the persons start quarrelling.

The generalized moral can be summarized as follows:

> To consider incompatible opinions (partial knowledge), which are based on (unnoticed) mono-perspective, incomplete cognition, as complete and absolute knowledge is detrimental.[31]

As the generalization of the elephant exemplum, its *tertium comparationis*, does not restrict the type of the object of cognition, it opens a wide range of applications which spans from theological questions to modeling information systems.

## 2.2 Preliminary epistemological classification of the versions

Our exemplary story only recognizes two properties of the human eye and correspondingly two levels of cognition and two classes of people. The opposite of the blind people are the seeing, whether explicitly mentioned or not. Due to the simple structure of reasoning induced by the simplified laboratory situation, the existence of seeing people as the logical opposite of the blind men has to be assumed inevitably. Only the ideal of the seeing (king, elephant-driver, rider, etc.) is able to achieve omni-perspective (not only multi-perspective) cognition. This hard and simplifying dichotomous contrast is intended because of the

[31] Precisely in the sense of this general moral, the expression *the blind men and the elephant* is metaphorically used in some modern languages: "The parable became so well-known in India that it was referred to in a standing phrase, «like the blind men and the elephant»" (Davids 1911: 201). Even if we did not find any reference in standard English dictionaries of quotations and proverbs, the metaphor occurs frequently, e.g. for little regarded literary critics, who always see only one aspect of an author or a literary period, such as in the titles of Lindfors 1975, Marshal (www), Mudrick 1977 and Spengemann 1982.

pedagogic purpose of the elephant exemplum. The judgment against epistemologically unreflected behavior shall be very strongly underlined. Therefore, the negative extreme which should be avoided is demonstrated plainly.

The continuous spectrum of cognition between blindness and full eyesight / vision, that is, between unnoticed mono-perspectivity and omni-perspectivity, is not mentioned. Therefore, the core story itself is not apt to illustrate a lot of epistemological issues pertaining to it. Many aspects of an epistemological judgment of the blind men's cognitive situation are left open:

- Are the blind men condemned to blindness (cognitive stupidity) for ever? Can they leave their state of cognition, that is unnoticed mono-perspectivity? Can they become seeing? How, in which way? Up to which degree? How many of them? Under which conditions?
- Can contradictory mono-perspective views be harmonized and reconciliated? How?
- What is the value of partial knowledge reached by mono-perspective cognition?

This potential of unmentioned aspects in the core story gives rise to a wide range of versions, each containing the same core. Narrators who use this motif complex can do it in very different ways, according to their narration purposes. They can modify and extend the core and fill its limitations with their own opinions. They can give the blind men different traits, attributes and qualities, portray them as stupid (cf. the categorization 'Fools and other unwise persons' in Thompson 1966), or just pitiable, or possessing the hidden power of full sight, or even as being people like us. They can let them remain blind or gain some sight or even full sight. The narrators thus express their attitude towards the blind men. The versions span the entire range from hard contempt by a self-confident elite (Buddhism and Tolstoy) through weak contempt in most versions and through a cautious sympathy in Kazantzakis's embedded story (all can gain insight into the mono-perspectivity of their views) to the extreme of Young's "Seven blind mice", where all the blind "men" become seeing in the end.

The narrators intend to lead the reader to the same attitude, to produce the same antipathy or sympathy towards the blind men in the readers' minds. The attitude shown is correlated to the identification the reader (is expected to and can) adopt (cf. 2.3.1). Two levels of identification are possible:

- with the omniscient king or narrator, who knows the elephant in its entirety and whose way of cognition is desirable. This is probable and easy, as the readers themselves know the elephant.
- with the blind men who only possess partial knowledge and whose way of cognition is undesirable. One will not identify oneself with a figure which is designed as defective in some sense, with two exceptions:
    1) Identification can be based on self-knowledge: admitting to sometimes making the same mistake as the blind men, but to normally knowing cognitive conditions a lot better than the blind men, of course.

2) A way out of the complete blindness is shown, from at least the relieving insight that one's cognition is mono-perspective (Kazantzakis) through the clear possibility of omni-perspectivity (Rumi's candle) to the "happy ending" of complete vision for all (Young).

Therefore, the possibility of identification is closely correlated to the expressed opinion whether the blind men have a chance to leave their state of blindness (at least partly) and even to reach full vision. This in its turn is correlated to the estimation of partial knowledge reached by mono-perspective cognition, as partial knowledge is only useful if you are aware that it is only partial. That is, the attitude towards the blind men and the possibility of identification with them are strongly correlated to an epistemological implication, to the narrators' judgment of the blind men's cognitive power. This is precisely what we are aiming at in this analysis of the versions of the elephant exemplum.

According to the attitude of the narrator towards the blind men and according to his closely correlated judgment of their epistemological situation and cognitive power, the versions can be ranked in a sequence of growing sympathy from – – to +++. With regard to the narrative purpose, the first three aim at the delimitation of the seeing from the blind people, the last five (marked with at least one +-sign) at an instruction of the blind men to lead them out of their blindness. Double parentheses mean that they do not get very far on the way to omni-perspectivity, single ones mean that they take some steps. A genealogical hypothesis on the historical development of the versions is not intended.

- – –: The blind men do not show any own interest in gaining knowledge about the elephant. They are urged to touch the animal: Buddhism, Tolstoy, partly Ramakrishna.
- –: The blind men are interested in gaining knowledge; their interest is partly even more stimulated because the elephant is an extraordinary animal: belongs to the king, to a caravan, is enormous and magnificent; they do not reach awareness of their mono-perspective cognition: most versions.
- 0: There is an external seeing man, but his effect on the blind men is not discussed: Shyama Shankar.
- ((+++)): The blind men can reach awareness of the mono-perspectivity of their cognition and of the defect in their knowledge (reduced blindness), but not omni-perspectivity: Kazantzakis. An explicit judgment of "awareness of mono-perspectivity" between unnoticed mono-perspectivity and omni-perspectivity can only be found in Kazantzakis.
- (+): At first one, then very few blind men can reach full vision, but it is a difficult journey, with many steps, from unnoticed mono-perspectivity (through multi-perspectivity) to omni-perspectivity: Nasafi *Tanzil* 2.
- +: At first one, then very few of the blind men can reach full vision: Nasafi *Kashf* 2.
- ++: In principle, every blind person can reach full vision if there is a candle: Rumi.
- +++: At first one, then all reach full vision: Young.

Sandburg's parody stands apart from this typology. Using the sequence above, the details of this classification are shown in the following table, which is split into eight columns, the meanings of which are described below. Column 5 represents the categories above.

Col. 1: Short name of the version, reference to Chapter 1 and to the chapter in the Appendix which contains the text.

Col. 2: Essential phrase describing the outcome or the moral of the exemplary story.

Col. 3: Extension or change of the elephant exemplum's core story:

- no = no extension or change; all are blind without any exception;
- yes = some extension or change.

Col. 4: Trigger of the cognitive process of the blind men: royal order or own wish.

Col. 5: Attitude of the narrator towards the blind men: correlated to

- ability of the blind men to leave their state of blindness (Can they become seeing?)
- identification of the reader with the blind men
- ability of the blind men to at least reach awareness of their mono-perspectivity (col. 6)
- estimation of the partial knowledge of the blind men (Is harmonization possible?) (col. 7).

Col. 6: Can the blind men gain awareness that their knowledge is only partial, defective, incomplete, that their cognition is mono-perspective? Often not mentioned; can be inferred from column 5: if a blind man can become seeing, he must also gain awareness of his former mono-perspectivity. Exception: In Kazantzakis's version, the blind men advance to awareness without becoming seeing. The awareness of mono-perspective cognition is a precondition for harmonized knowledge on the basis of multi-perspective cognition (col. 7).

Col. 7: Can the blind men harmonize their contradictory opinions and gain complete, all-encompassing knowledge? The reconcilability (integration, coordination, synchronization) of contradictory opinions about the objects of cognition and their qualities is analyzed. Precondition is column 6, the awareness of mono-perspective cognition.

Col. 8: Is the elephant exemplum applied to theological and philosophical questions?

| **Version** | **Essential phrase from the internal, generalized or external moral** | **Extension / change? no = all are blind** | **Trigger of the cognitive process of the blind men** | **Attitude towards the blind men: can they become seeing?** | **Can the blind men gain awareness of partial knowledge?** | **Harmonized knowledge possible?** | **Application to metaphysical questions?** |
|---|---|---|---|---|---|---|---|
| Buddhism 1.1.1 | "The blind all fought amongst themselves with their fists ... and the King was highly delighted." | yes: royal order | royal order | – – opposition between blind men and king | not mentioned | not for the blind men, only for the king | yes |
| Tolstoy 1.5.2 | "All the blind started to argue and to quarrel." | yes: royal order | royal order | – – opposition between blind men and king | not mentioned | not for the blind men, only for the king | not explicitly excluded |
| Ramakrishna 1.3.2 | "They gave their different versions of the elephant." "A man who has seen only one aspect limits God to that alone." | no | "they were asked" | – | not mentioned | not for the blind men | yes |
| Hindu Robinson 2 1.3.3.2 | "From what each learned, he drew the beast." "Our God is One." | no | not mentioned | – | not mentioned | not for the blind men | yes |

| **Version** | **Essential phrase from the internal, generalized or external moral** | **Extension / change? no = all are blind** | **Trigger of the cognitive process of the blind men** | **Attitude towards the blind men: can they become seeing?** | **Can the blind men gain awareness of partial knowledge?** | **Harmonized knowledge possible?** | **Application to metaphysical questions?** |
|---|---|---|---|---|---|---|---|
| Sanai 1.2.2 | "Every one had seen some one of its parts, and all had seen it wrongly." | no | the blind men's wish; royal elephant; group | – | not mentioned | not for the blind men | yes |
| Gazzali 1 1.2.1.1 | "Each was right in a certain sense ... but none was able to describe the elephant as it really was." | no | the blind men's wish; extraord. beast; group | – | not mentioned | not for the blind men | yes |
| Gazzali 2 1.2.1.2 | "Each taking a part for the whole ..." | no | the blind men's wish | – | not mentioned | not for the blind men | yes |
| Nasafi *Kashf* 1 *Tanzil* 1 1.2.4.1/2 | "They can never arrive at the object of their demonstrations ... and ... the conflict in opinions will never be relieved." | no | the blind men's wish; group | – | not mentioned | not for the blind men | yes |

| **Version** | **Essential phrase from the internal, generalized or external moral** | **Extension / change? no = all are blind** | **Trigger of the cognitive process of the blind men** | **Attitude towards the blind men: can they become seeing?** | **Can the blind men gain awareness of partial knowledge?** | **Harmonized knowledge possible?** | **Application to metaphysical questions?** |
|---|---|---|---|---|---|---|---|
| Vrhaspati 1.3.1 | "They did not learn anything about what the elephant looks like ... only the parts touched were object of their knowledge." | no | the blind men's wish | – | not mentioned | not for the blind men | yes |
| Hindu Robinson 1 1.3.3.1 | "Thus answering one another, they quarreled till they parted." "... God which the mind cannot reach" | no | the blind men's wish | – | not mentioned | not for the blind men | yes |
| Saxe 1.5.1 | "Each was partly in the right and all were in the wrong!" | no | the blind men's wish | – | not mentioned | not for the blind men | against clerical "experts" |
| Hindu Shyama Shamkar 1.3.4 | "You are all right and you are all wrong ... you have had only the knowledge of parts, but you are disputing about the whole." | yes: external seeing man | the blind men's wish | 0 no effect of the seeing man | not mentioned | for the seeing man | yes |

| **Version** | **Essential phrase from the internal, generalized or external moral** | **Extension / change? no = all are blind** | **Trigger of the cognitive process of the blind men** | **Attitude towards the blind men: can they become seeing?** | **Can the blind men gain awareness of partial knowledge?** | **Harmonized knowledge possible?** | **Application to metaphysical questions?** |
|---|---|---|---|---|---|---|---|
| Kazantzakis 1.5.4 | different opinions, arguing; "The blind people, that's us." | yes: surrounding story | the blind men's wish; royal elephant; group | ((+++)) awareness of blindness | yes surrounding story | no | yes |
| Nasafi *Tanzil* 2 1.2.4.2 | "One of them is made seeing ... Only some few accept the word of the seeing man ... The others persist in their stupidity." | yes: one is made seeing; seeing man is part of the story | the blind men's wish; group | (+) first one, then a few; stages on the way to multi-perspect. | not mentioned, but can be inferred | yes, but very rare 100,000 : 1 | yes |
| Nasafi *Kashf* 2 1.2.4.1 | "One of them is made seeing ... Only some few accept the word of the seeing man ... The others persist in their stupidity." | yes: one is made seeing; seeing man is a hypothesis by the narrator | the blind men's wish; group | + first one, then a few | not mentioned | yes, but very rare | yes |

| **Version** | **Essential phrase from the internal, generalized or external moral** | **Extension / change? no = all are blind** | **Trigger of the cognitive process of the blind men** | **Attitude towards the blind men: can they become seeing?** | **Can the blind men gain awareness of partial knowledge?** | **Harmonized knowledge possible?** | **Application to metaphysical questions?** |
|---|---|---|---|---|---|---|---|
| Rumi 1.2.3 | "If there had been a candle in each one's hand, the difference would have gone out of their words." | yes: only temporary blindness in a dark house | the "blind men's" wish | ++ depending on candle | yes, although not mentioned | yes with a "tool" | yes |
| Young 1.5.5 | "Now they saw, too. Knowing in part may make a fine tale, but wisdom comes from seeing the whole." | yes: at first, one gets full sight, then all | the blind men's wish | +++ first one, then all; "happy ending" | yes, although not mentioned | yes | not explicitly excluded |
| Sandburg 1.5.3 | "Three men saw the elephant three ways and let it go at that." | yes: parody | the "blind men's" wish | 0 | 0 | 0 | not explicitly excluded |

# 2.3 Restructured epistemological classification of the versions

We will now restructure the classification in 2.2. From an epistemological point of view, you have to distinguish between cognition under one, a few, many and all aspects, between mono-, oligo-, multi- and omni-perspectivity. You also have to distinguish between aware and unaware mono- / oligo-perspectivity. A differentiation between aware and unaware multi-perspectivity is not established, as it seems tautologic: if one has reached multi-perspective cognition, that is the ability to examine an object of cognition from several different view-points, then we assume that one is aware of it. We can also state that cognition unaware of its perspectivity is always mono-perspective, or at the most oligo-perspective. If we use this decision, we do not lose any important special case. This argumentation implies four cases:

- No step out of blindness is possible: restriction to unnoticed mono- / oligo-perspectivity: categories – –, –, 0 from 2.2
- First step out of blindness: awareness of mono- / oligo-perspectivity: category ((+++)) from 2.2
- Second step out of blindness: aware multi-perspectivity, but not omni-perspectivity, that is, still incomplete cognition: category (+) from 2.2
- Third step out of blindness: complete omni-perspectivity; only this case implies complete cognition: categories +, ++, +++ from 2.2

The sequence from 2.2 remains the same. We will now discuss these four cases in more detail in 2.3.1 to 2.3.4 and finish with epistemological remarks in 2.3.5.

## 2.3.1 No step out of blindness is possible: unnoticed mono- / oligo-perspectivity

This position is taken by the two most pitiless versions and by those versions which are similar to the core story:

- In the hardest versions, a king fools blind people for the purpose of demonstration and his personal amusement, although he already in advance knows the outcome of his “experiment”, the quarrel of contradictory partial knowledge. The blind men do not have any cognitive interest of their own: they are urged to touch the elephant, and they are only allowed to touch one part each.
- In the versions similar to the core story, there is not any king, and the blind men have a cognitive interest of their own. Nevertheless, each blind man touches only one part of the elephant, and the final arguing and wrangling is the same as in the hardest versions.

In both cases, it is underlined that the behavior of the blind men is stupid, is to be avoided. Their partial knowledge is considered as useless, as they are not able to harmonize it. The blind men are 'the others', they are stupid and despicable, they are blind and remain blind. No stress is laid upon the question whether the blind men can leave their defective state of cognition. There is a hard boundary between the classes of the blind men and the seeing. The narrator intends that the readers identify themselves with the king or the seeing. The narration purpose is mere contempt towards the blind men and identity construction *ex negativo*.

In the elephant exemplum (and its application), mono-perspective doctrines are put in opposition to an omni-perspective doctrine. The possible problem, that it might only seemingly be omni-perspective and in its turn mono-perspective on a higher level of cognition, is not discussed. This totalitarian view of a self-defined elite is surely intended by the narrators (cf. 2.3.5.3).

From a modern point of view, it is a negative consequence of the simplified two-level-model in the elephant exemplum. Therefore, a thoughtless identification with the experimenting king or the seeing, who possess the "truth", is epistemologically absurd. Instead, it is necessary to identify oneself with the blind men, even if this is very difficult, as blindness is an undesirable state (cf. 2.2). This is only possible if ways out of blindness, that is unnoticed mono-perspectivity, are explicitly shown by the narrator.

### 2.3.2 First step out of blindness: awareness of mono- / oligo-perspectivity

The first step out of unnoticed mono- / oligo-perspectivity (blindness) is to become aware that your own view of an object of cognition only considers one or a few sides of it and that your knowledge resulting of them is incomplete (see below).

This step is explicitly discussed by one version only, by Kazantzakis's[32]. He shows the relieving effect of awareness of mono-perspectivity with regard to images of God. People considering their contradictory and incomplete images can tolerate this cognitive situation a lot better if they are aware of the incompleteness of their knowledge. The learning process is part of the story surrounding the elephant exemplum. Negative effects of blindness disappear: one's own opinion is no longer considered as absolute; there is tolerance and no longer quarrel between conflicting opinions; the attitude towards them is completely changed.

In the surrounding story, Kazantzakis designs his blind men as normal people of the 20th century. As all of them are able to learn, an identification of the reader with them is possible and intended: "The blind people, that's us". Kazantzakis

[32] Saxe tends towards a similar direction, although he does not explicitly give rise to this interpretation: the clergymen have mono-perspective views of God and are not aware of it. A way out of their blindness is not shown, they do not gain the necessary insight. There are no seeing persons, and the accessibility to full sight seems to be excluded. See 1.5.1.

excludes the seeing and omni-perspective knowledge, a position which is unique in the history of the elephant exemplum. He only aims at the judgment of one's own opinions in cognitive situations where complete and omni-perspective knowledge is not possible for humans.

Even if one does not know whether, why and up to what degree one's knowledge is incomplete and defective, the mere awareness of this fact will inevitably change one's epistemological attitude. The fact of mono-perspective cognition and incomplete knowledge does not only depend on the subject of cognition, but also on the object of cognition, which can only present some aspects to humans. Complete knowledge cannot be forced. This applies not only to metaphysical objects, such as God, but also for physical ones, with extreme sizes at extreme distances in micro- and macrocosm. In these fields, there are cognitive situations where physicists are aware of the restrictions on mono- or oligo-perspectivity and still cannot change it in spite of their awareness, e.g. astronomical observations: humans are not able to directly observe the surface of stars millions of light-years away from the earth.

The new state of cognition, the mere insight into the incompleteness of cognition and knowledge, should in many cases only be an intermediate state, from an epistemological point of view (exceptions above). So far, this is a passive attitude, which can be changed to an active one: what is still missing, is an active treatment of contradictions between opinions, which has to be based on changed cognitive strategies.

### 2.3.3 Second step out of blindness: aware multi-perspectivity, but not omni-perspectivity

The second step is the fundamental change from passive mono- / oligo-perspective to active multi-perspective cognitive strategies.

One important point has to be underlined in advance: changed cognitive strategies do not, at least not automatically, lead to omni-perspective cognition and hence to complete knowledge, as if there were only two states of human cognition, which the elephant exemplum implies for a didactic purpose. This epistemological fact is neglected in all interpretations, with the exception of two: Kazantzakis, who confines his blind men to the mere awareness of mono-perspective cognition and incomplete knowledge, and Nasafi who claims successive stages also for supersensory perception (his omni-perspective cognitive strategy) in *Tanzil* 2.

Most versions only state that a drastic change of the strategies of cognition is necessary, in a theological context from intellectual, rational to mystic cognition. Frequently, the impression is produced that belonging to the seeing depends on the experience of the grace of God, by which one is struck as by lightning, as if it were one simple jump from unnoticed mono-perspectivity to omni-perspectivity. We cannot decide whether this impression really coincides with some narrators' intentions. Nevertheless, the two-level-model of mono- and omni-perspectivity in the elephant exemplum turns out to be too simple.

Only Nasafi mentions the epistemological step 2 out of blindness in his comment on the elephant exemplum in *Tanzil* 2, and lays stress upon the hard work which lies behind a change of cognitive strategies. This has to be done in several steps. Nasafi, however, does not assign any special epistemological value to these steps before reaching omni-perspectivity. From a modern point of view, knowledge based on multi-perspective cognition has an important epistemological value for humans, as omni-perspectivity is restricted to limited fields, as explained in step 3 below.

Aware multi-perspectivity means an active treatment of mono-perspective views, including the search for valuable opinions other than one's own, their judgment (approval – refusal) and the attempt to consciously reconcile, harmonize and integrate them. From this point of view, partial knowledge from mono-perspective cognition gains a certain value. If any integration is possible at all (the only case the elephant exemplum deals with), it can be done with different techniques, such as:

- merely additive
- additive with the elimination of logical contradictions / inconsistencies
- additive on a higher level of cognition (in the case of our elephant, the seemingly contradictory mono-perspective views are compatible and complementary as to be inferred from the existence of the elephant)
- using strategies of the theory of gestalt (an entirety is more than the mere sum of its parts), which leads to a new total view of an object of cognition
- using an umbrella theory (e.g. a solution to physical wave particle dualism).

The harmonization of partial knowledge, however, need not lead to all-encompassing knowledge at all. Even knowledge which is produced from the reconciliation of mono-perspective views need not be complete, but can be partial and mono-perspective in its turn. Even if you think you have regarded every possible aspect of a problem or situation with a multi-perspective cognitive strategy, you are never sure that you or someone else will not find another aspect tomorrow. This fact becomes obvious once your opinion comes in contact with well-reasoned, contradictory ones. A possibly never ending iteration starts, and you never know whether, why and up to what degree your knowledge is still incomplete (as pointed out in the first step). Approximations can be achieved (cf. Holl 2003), but you should never assume to have arrived at omni-perspectivity and complete knowledge, and never – as Nasafi puts it in *Tanzil* 2 – "take the way station for the goal" (Meier 1954: 165, note 40).

Young demonstrates the gradual integration of opinion after opinion, until the omni-perspective view is finally gained; but he does not judge the value of the multi-perspective views on the way to the omni-perspective one. Their epistemological value remains vague. The risk that the integration of partial knowledge might already terminate on a multi-perspective level is not even mentioned. The aim of the entire cognitive process is only to gain the final all-encompassing knowledge on the basis of omni-perspective cognition.

### 2.3.4 Third step out of blindness: complete omni-perspectivity

The third step is the achievement of omni-perspective cognition and absolute knowledge, the ideal of the theological narrators and their versions. The existence of omni-perspectivity is assumed as real, but unreachable for the blind men in most versions of the elephant exemplum. There are only three exceptions. According to Nasafi, very few blind people can reach it. Rumi has a more optimistic view of the change of cognitive strategies; his 'blind men' are only temporarily blind while they touch the elephant in a dark house. An easily accessible instrument, a mere candle, would have a great effect and would be sufficient to let all his figures gain full sight. Young leads the exemplary story to a happy ending, without using a tool. First one, and then all his blind mice gain the omni-perspective view of the elephant.

In real life, things are not so simple; mostly, human knowledge is partial and absolute knowledge an illusion. Omni-perspectivity can only be reached in artificial, limited, formal fields, such as mathematics and book-keeping. An example: one can find out every possibility for the construction (with compasses and ruler) of a triangle from three given pieces (edges and angles). Thus one can get an omni-perspective view of triangles and their construction. The number of cases is limited and can be listed completely.

Complete observation of physical, chemical, biological, social objects and systems, however, is entirely impossible. There are limitations resulting from the nature of the subject (observer) and of the (observed) object of cognition:

- The observer is exposed to the limitations of time: he does not have an unlimited period of observation. A human life would not be sufficient to describe a table in every (molecular) detail. These limitations lead to the cognitive strategy of selective perception. Only a couple of key features are perceived: those which the observer – often unconsciously – considers as the important ones (cf. Holl 2003). Furthermore, limitations arise from the observer's wish not to destroy his object of cognition (cf. the examination of Egyptian mummies).
- The observed object can set several limitations to the degree of observation, e.g. its distance to the observer (cf. stars light-years away, see 2.3.2), its size (cf. microcosm) and its hidden properties.
- Observer and observed object are exposed to mutual influence during the process of observation. Sub-atomic particles and social systems record any form of observation and change their behavior, and the observer also changes by learning new aspects of the observed objects, so that the observer is another person at the end of the observation period than in the beginning.

Even if one does not reach omni-perspectivity, there is an important effect of aware multi-perspectivity: if one is aware of the problem of unnoticed mono-perspectivity and consciously uses multi-perspective strategies of cognition, and yet is aware of the impossibility of omni-perspectivity (complete observation)

and complete, absolute knowledge, most of the undesired effects of the state of blindness are left behind.

If you are aware of the epistemological danger of mono-perspectivity, you see a lot better – even without Rumi's candle – even if not perfectly.

### 2.3.5 Final epistemological remarks

From an epistemological point of view, there are some aspects which we can criticize in the elephant exemplum. Their importance will become yet more obvious when we discuss multi-perspectivity in information systems in Chapter 3.

#### 2.3.5.1 Types of conflicting opinions

The standard version deals only with inconsistent opinions which can be harmonized on a higher level of cognition and which there turn out to be complementary. Overlapping views can be found in Gazzali's and Kazantzakis's versions only (cf. 1.2.1 and 1.5.4). Incompatible opinions which cannot be harmonized are not discussed in any version.

#### 2.3.5.2 Interpersonal and intrapersonal multi-perspectivity

The first illusion of the blind men is their conviction of omni-perspectivity and complete and absolute knowledge. Each of the conflicting opinions is assigned to an individual person. So we can state that the type of multi-perspectivity illustrated in the elephant exemplum is interpersonal multi-perspectivity, or more precisely "multiple intrapersonal mono-perspectivity".

The second type of multi-perspectivity is hidden in the elephant exemplum. It can be inferred when we have a close epistemological look at the elephant exemplum, but we do not know whether it is really intended. We aim at conflicting intrapersonal multi-perspectivity. One might assume that all perspectives within the same person are harmonized. It is true that humans possess a (nature- and / or nurture-based) consistency-checking (conflict detection) mechanism in their cognitive apparatus, but this mechanism does not work in the sense of formal logic. It is only very obvious and severe contradictions which are fought against. Weak and hidden contradictions without serious effects in everyday life are tolerated.

We consider the prejudice of intrapersonal logical consistency of opinions the second illusion of the blind men. They become aware of contradictions only in relation to the opinions of other blind men. One's own opinion is not called into question; any self-criticism is missing. Therefore, the assumption of absolute knowledge can easily arise and continue.

Another interpretation of the elephant exemplum would lead to an equivalent consequence: do not regard the blind men as persons, but as personalizations of partial knowledge on the basis of mono-perspective cognition. Then interpersonal and intrapersonal multi-perspectivities are covered as well.

### 2.3.5.3 The mono-perspective moral

The two-level model of the core story is an epistemologically coarse simplification. Versions treating multi-perspectivity end up in a mono-perspective moral. Omni-perspectivity coincides with mono-perspectivity. This is a contradiction within the versions and futile from an epistemological point of view (cf. 2.3.1).

### 2.3.5.4 The contrary of blindness

Let us once more have a look at the core story and its internal moral from 2.1. It is negative, condemning a certain cognitive behavior. If you want to make a positive exemplum of it, you have to define the opposite of blindness. The crucial point is that precisely this is left open in the core story. So it is up to the narrators!

Most versions (except Kazantzakis) make use of the implicit, simple, logical opposite (full vision) of the condemned epistemological state (blindness) and its consequences, and add the constructed ideal of omni-perspectivity, in the story, in the moral or in the comments. This ideal is epistemologically doubtful, as well as the designed way to reach it. Mayeutic cycles consisting of possibly never ending iterations of comparisons with other opinions and of considerations under new aspects are not mentioned. This complex process is reduced to a mere linear one, with unnoticed mono-perspectivity at one end and epistemologically unreachable omni-perspectivity at the other end.

In the versions quoted in this paper, the epistemological potential of the elephant exemplum has not yet been exhausted. The ideal of the seeing is only implicit in the motif complex. Therefore, we can explicitly exclude it as futile, define a new opposite of blindness and give the elephant exemplum an epistemologically modern ending, according to our discussions of the steps leading out of blindness. Both the necessity of multi-perspective cognition and the incompleteness of knowledge should be underlined. For this purpose, we need a question about the elephant, which the reader, who of course thinks he completely knows it, cannot answer. We suggest the following new version.

Let us take the Buddhist version, until the blind men quarrel in the end. Now the King tells his show-man to show all of the blind men each part of the elephant one of them had touched before. “Any more reason to quarrel,” asked the King.

“No, now we’ve understood,” said the blind men.

Then, one of the blind men is allowed to touch the trunk’s tip which none of them had touched before. “The elephant is wet,” he shouted.

“No,” replied another blind man, “a single part of the elephant is wet.”

“Excellent,” said the King, “do you now know what an elephant is like?”

“Yes, we do.”

“Can you then tell me how many hairs he has?”

“No, we can’t count them,” said the blind men.

“I can’t either,” said the King. “So, do **we** now know what an elephant is like?”

# 3. Multi-perspective modeling in information systems

Multi-perspectivity is a well-known phenomenon in different areas. Already in ancient Roman mythology, Janus, the god of gates and doorways, is depicted with two faces looking in opposite directions. A modern example from the natural sciences is the wave-particle dualism in physics; that is, a subatomic particle can behave as a particle or a wave, depending on the experiment executed. From perceptional psychology, we know that the recording of information is only one part of perception. The other part is a selection of information or even a completion of information. When people look at the same object, everyone "sees" something different (interpersonal multi-perspectivity). Mental-psychical predispositions, such as interest, motivation, attitude, foreknowledge, etc., lead to the effect that some features dominate, some are neglected during perception.

In spite of widespread knowledge on multi-perspectivity outside computer science and information systems, both sciences hardly took any notice of it. In a recent Ph.D. thesis from the University of Crete (Theodorakis 2001), Nikos Kazantzakis's version of the elephant exemplum is used with regard to knowledge representation in order to illustrate that definitions are only meaningful within a certain context: they can be overlapping, complementary or contradictory.

In computer science, the first reference we know can be found in Yourdon (1989: 276-277) under the keyword 'model balancing'. It is true that Yourdon recognizes the great impact of multi-perspectivity on software development: "But many of the more difficult and insidious errors are intermodel errors, that is, inconsistencies between one model and another" (Yourdon 1989: 277). But he confines himself to its syntactic aspect, which he considers the only important one, and omits the rest: "The balancing rules … can be automated" (Yourdon 1989: 284). This 'tool view' is very narrow (cf. 3.2.2).

A later reference in applied computer science is given by the German computational jurist Wilhelm Steinmüller. He uses a new version in the form of a fable to illustrate the issue of cognition of objective truth (Steinmüller, 1993: 51 f.), as already mentioned in the Introduction (cf. 0.1). His version is closely related to project management, which plays an important role in IT projects as well as in other fields.

There is a fascinating group-psychological experiment which illustrates Steinmüller's issue under the aspect of communication. The members of a group get written information about a problem. They are asked to find a solution to it within the limited time of half an hour, but they are not told that the texts are different. The solution to the problem, however, can only be found if all the group members realize that they got overlapping and complementary information and put their knowledge together. It is amazing to observe how many groups do not even realize that the information given to each person is different, let alone that they reach the state of adding it up.

Our focus is not on project management and communication, but on IS modeling. Although both form the framework of IS modeling as well, there are epistemological problems in addition to the communicational ones, which show up in any form of teamwork. The former lie deeper and cannot be solved by better communication alone. In the following two chapters, we will analyze the phenomenon of multi-perspectivity in IS modeling (3.1) and demonstrate approaches to a well-reasoned and conscious treatment of it (3.2).

# 3.1 Analysis of multi-perspectivity in information systems

With regard to IS, we have to consider both types of conflicting opinions: the interpersonal ones explicitly mentioned in the elephant exemplum (between different model designers: multiple mono- / oligo-perspectivity) and the intrapersonal ones only implicitly alluded to in the elephant exemplum (within one and the same model designer: oligo-perspectivity). As illustrated in the elephant exemplum, the human mind possesses a built-in logical consistency checking mechanism. Contradictory opinions are not tolerated when they come into contact with one another. This mechanism, however, works only roughly, detecting only obvious logical contradictions. It overlooks or tolerates weak and hidden logical inconsistencies.

Therefore, humans are able to live with several non-disturbing inconsistencies. IT systems cannot do that: they are formal-logical machines, the reactions of which are detrimental if they contain logical contradictions (if they can at all). Formal logic and machines based on it are not tolerant towards logical contradictions, which everyday life can handle up to some degree. Therefore, IS model designers should construct models which are logically consistent.

Models cannot be represented in large coherent representations, but due to reduction of complexity and a better understandability, in many mono-perspective small partial models (3.1.1). They are based on intrapersonally and interpersonally mono-perspective views (3.1.2) of model designers. These get their information on a company in the form of mono-perspective opinions from different employees on different management levels (3.1.3). Each type of mono-perspectivity concerned is a source of logical inconsistencies.

### 3.1.1 Different modeling aspects: multi-aspectuality

Models are only usable if documented, that is, if they are represented verbally in textual descriptions and / or graphically in diagrams. This is done with model representation languages, e.g. graphic notations. Only then can models be communicated to and discussed by other persons. It is a fundamental epistemological problem that enterprises and their departments cannot be described in one small diagram only, without losing lots of information; neither can they be described in one huge, all-encompassing, coherent diagram, without losing the overview. This is due to the complexity of reality on the one hand and to the limited power of human perception on the other, which cannot understand arbitrarily large diagrams. As a result, (the representation of) a model has to be split up – decomposed – into several small partial models, which in turn are represented in small, perceivable diagrams. Decomposition is done in two orthogonal dimensions, the necessity of which is not eliminated by modern notations, such as the Unified Modeling Language.

- Vertical or hierarchical decomposition corresponds to a top-down design of a model, starting with a very coarse overview and proceeding to more and more detailed views of an enterprise. Partial models are constructed on different abstraction levels. This technique is well known in IS, when information flow diagrams and control flow diagrams are designed. It is also used for module-based software development.
- Horizontal decomposition is used to describe different aspects of an enterprise, such as the data aspect or the process aspect. It is important to distinguish modeling aspects from model notations, that is, representation languages. The four traditional, but still valid basic modeling aspects in IS are outlined in the table below, which also shows examples of corresponding notations. Of course, there are not any hard boundaries between the four cells of the table. Each aspect covers also parts of the neighboring aspects, for example, business process models often contain references to data, and special notations can be assigned to two aspects at the same time, such as HIPO (Hierarchical Input Process Output) to information flow and control flow.

| | Static models | Dynamic models |
|---|---|---|
| Data models | data (structure) models:<br>data structure diagrams,<br>entity-relationship models (ERM),<br>UML class diagrams | information flow models:<br>data flow charts,<br>Structured Analysis (SA) diagrams,<br>UML use case diagrams |
| Function models | function structure models:<br>compositional function trees,<br>Jackson trees | control flow models:<br>Nassi-Shneiderman diagrams,<br>block diagrams,<br>event-driven (business) process chains,<br>UML activity diagrams |

Considering both types of decompositions, you look at the same object of cognition from different points of view and with different degrees of exactness. This is just an example for multiple mono-perspectivity.

There is a third dimension of multi-perspectivity, the diaphasic dimension. After having established an enterprise model, it has to be transferred to the implementation model of an information system. This has to be done in accordance with a phase concept in several steps, via coarse and fine technical models, each of which in turn is split vertically and horizontally.

**Each partial model, however, is related to and overlaps with several other partial models. They cannot merely be added on a higher level of cognition as in the elephant exemplum!** As IT systems are formal machines, all of the mono-perspective partial models derived from the three dimensions of multi-perspectivity have to be coordinated, harmonized and made compatible; that is, logical contradictions have to be eliminated. The aim is a coordinated multi-perspective view of the enterprise (see 3.2) and its information system.

### 3.1.2 Different model designers: multi-personality

Two cases have to be distinguished: one single model designer is responsible for the model construction or a team of them.

If there is only one model designer, one might assume that the partial models designed by him are automatically harmonized and cannot contain any logical contradictions. This, however, is not true due to two facts:

- The human consistency verifier (checking mechanism) does not work perfectly. Even within the same person, logically inconsistent opinions are not excluded at all. Every person can have several intrapersonal mono-perspective views (oligo-perspectivity).
- The consistency verifier is overcharged. The high complexity of an enterprise does not allow comprehending all of its details at the same time. One and the same object of cognition (enterprise) has to be regarded from different sides and under different aspects. At the end of a modeling process, there can be so many partial models that it is impossible to keep all the interdependencies between them in mind[33].

One of us (AH) experienced very often that a project report or a master thesis written by a single student can contain numerous contradictions. Therefore, to have one responsible model designer only is not a guarantee against inconsistencies, except when a very small and very simple segment of reality is modeled under one aspect only.

[33] Albert Einstein is reported to have been an exception when he renounced to sign the American constitution as he found too many contradictions in it.

When model designers work together as a team, they can model

- one and the same aspect of an enterprise: each designer establishes an alternative model. In order to compare them, they have to be harmonized. They need some parts in common, some overlap, a basis of comparison, so that parallels and differences between them become obvious.
- different aspects of an enterprise (3.1.1): each designer deals with one aspect or several designers investigate one aspect or there can be model designers who work on different aspects.

Each of the model designers has at least one personal mono-perspective view, normally several, that is an oligo-perspective view. The coordination effort of their different views does not increase linearly, but binomially, as the number of coordination possibilities between n model designers corresponds to the number of sides and diagonals in an *n*-polygon.

### 3.1.3 Different opinions of different employees

Model designers base their models on generic or reference models on the one hand and on interviews with employees of a company on the other. Employees have mono-perspective opinions and attitudes, as they are subject to the same epistemological conditions as model designers. All-encompassing, harmonized multi-perspective views of enterprises are rare. Most companies do not possess them. Each of the management levels has its own mono-perspective opinion, attitude or image, different employees can have different mono-perspective opinions and, even in the same mind, slightly contradictory mono-perspective opinions can have their place (oligo-perspectivity). All these smaller or bigger logical inconsistencies can coexist and survive, if they are not too evident and if they do not cause any obvious damage.

Most of the employees are not aware of this situation, especially not with regard to the hard requirements of logical consistency which need to be met when deploying IT systems. Model designers have to face this multiple oligo-perspective mixture of a variety of images of an enterprise when they base their model construction on interviews as usually done. As their distance to the enterprise is larger, they will find more inconsistencies than the employees themselves.

Ulrich Frank examined the issue of multi-perspective enterprise modeling in Frank 1994. He distinguishes the IS perspective (from model designers to system administrators), the organizational perspective and the strategic perspective.

### 3.1.4 Conclusion

The different perspectives outlined in 3.1.1 and 3.1.2 can be summarized in a table:

| | One model aspect | Several model aspects |
|---|---|---|
| One model designer:<br>intrapersonal<br>mono- / oligo-perspectivity | – | multi-aspectual |
| Several model designers:<br>interpersonal multiple<br>mono- / oligo-perspectivity | multi-personal,<br>alternative models | multi-personal and<br>multi-aspectual |

It is easy to see that the usual situation of several model designers working on many model aspects at the same time leads to an exploding effort of harmonization. Different model designers have different previous knowledge and different psychic-mental-intellectual-social dispositions. They can use the same words with different meanings (see 3.2.2). Even one model designer often has difficulties to keep his variety of mono-aspectual partial models consistent.

Human thinking is **oligo-perspective**, that is, it can only handle a few perspectives at the same time, and **not perfectly logically harmonizing**, that is, the human logical-consistency verifier tolerates superficially undisturbing contradictions. It is not suitable for the formal-logical needs of IT deployment and not suitable for consistently modeling complex socio-technical systems, such as enterprises, from many different perspectives. Therefore

- inconsistent points of view between different model designers and
- contradictions and incompatibilities between partial models

are normal and cannot be avoided.

We have to take into consideration that the problem of inter- and intrapersonal multi-perspectivity and the hence following need to harmonize different perspectives with regard to IT is natural. That is, problems related to it are usual in IT projects, although not systematically dealt with. It is a great exception if undesired consequences of multi-perspectivity do not show up. Methods to reduce them will be discussed in the next and last section.

## 3.2 Approaches to a conscious treatment of multi-perspectivity in information systems

As underlined in 2.3.3, the way out of mono-perspectivity is the one via aware mono-perspectivity to coordinated multi-perspectivity, that is, the conscious treatment and coordination of many mono-perspective views of an object of cognition. Knowing, however, that enterprises are complex socio-technical systems, the question arises whether logically consistent formal models of them are possible at all. Can all the small mono-perspective partial models necessary to describe an enterprise be harmonized, so that the outcome is a coordinated multi-perspective view of the enterprise, a comprehensive, consistent formal model, and not an uncoordinated multiple mono-perspective view, a collection of uncoordinated partial models?

Above all, IS experts have to remember that a complete model of any segment of reality is impossible. Enterprises are human artifacts, which contain two main components: more or less formal business structures, and human employees, who are not accessible to formalization. What we can describe in formal models are only the formal traits of reality. Every enterprise comprises lots of formal structures, which can be used for the construction of a formal model, which does of course not cover every feature of the enterprise.

In the light of this background (and only with this background), one of us (AH) can state his long-term personal experience: yes, partial enterprise models can be harmonized! The reality of enterprises is such that logically consistent models are possible. AH has only seen contradictions due to bad observation and interviewing, due to a lack of coordination between partial models and due to contradictory implicit pre-conditions. AH formulates this experiential result as his "hypothesis of consistency" (Holl 1999a: 192).

Therefore, it is necessary to have a closer look at methods to handle external (3.2.1) and to avoid internal (3.2.2) inconsistencies. The main method will be outlined in 3.2.3.

### 3.2.1 Methods to treat external inconsistencies

As outlined in 3.1.3, IS experts are confronted with a variety of mono-perspective views of a company which are uttered by the employees during the interviews.

The first requirement for IS experts is that they use efficient communication and interviewing techniques, such as linguistics-based and psychology-based Requirements Engineering (cf. Rupp 2001), in order to record the employees' opinions as completely as possible. This, however, is not our focus in this paper.

During this process, logically well-trained IS experts will find a lot of contradictions, which can be treated in standard ways. Alternatives can be discussed, with results like:

- selection of the predominant perspective
- pragmatic selection of the best looking perspective
- selection by order, that is, some responsible person in the enterprise decides which one of two inconsistent perspectives has to be chosen for IS modeling.

If a contradiction still turns out to be unsolvable, it can be excluded from modeling or, in extreme cases, the project has to be stopped.

Thus, as soon as an inconsistency becomes obvious and all the persons involved are aware of it, some solution can be found. This kind of inconsistencies is not the core problem.

There are two more difficult types:

- Hidden inconsistencies in the company, which remain undetected during the interview process: besides excellent Requirements Engineering techniques, an aware treatment of the second type will help to considerably reduce them.
- Home-made inconsistencies, which are produced by the inevitable splitting (vertical and horizontal decomposition) into small partial models: techniques to avoid them are discussed in the next section.

### 3.2.2 Methods to treat internal "home-made" inconsistencies

In spite of their mathematical training, IS experts cannot neglect that their in-built consistency checker is limited and not perfect. They cannot easily handle the complexity of a model which is split into dozens of partial models (cf. 3.1.1 and 3.1.4). This fact becomes obvious not only in model designer teams, but also in individual model designers.

The first aid is given by compatibility checking tools, e.g., it can be checked in data flow diagrams that all data flows from and to a function have to occur again when it is vertically decomposed into partial functions. This kind of decomposition turns out to be less difficult.

Bigger problems arise in the coordination of horizontally decomposed models, that is, in the case of a dimension of multi-aspectuality. Tools can, of course, check that you use the same label for a function in a data flow diagram and in a related process diagram, but they cannot check that you use the label in both diagrams with the same meaning.

As background, an IS expert should know that every linguistic sign possesses two sides:

- the form, that is the sequence of letters or sounds and
- the meaning, that is its semantic reference.

Therefore, there are two common situations in natural languages:

- homonymy (or polysemy): one form, several meanings
- synonymy: several forms, one meaning

Both phenomena do not disturb us in natural languages. The context and the human knowledge about the world determine how a word should be understood. In the field of formal models, however, IS experts have to obey the conditions of formal language, that is, a one-to-one correspondence between form and meaning. Synonymies are already detrimental, but homonymies are disastrous. No IT system is able to use one and the same description for two meanings, except in situations with formally well-defined contexts. Therefore, terminological harmonization is indispensable.

Compatibility checking tools can only check the form, but not the meaning in which a model designer uses a word. This can only be done by humans with a very extensive modeling background. AH has often experienced models of one or more persons, where the same word, e.g. the name of a function, was used with two different meanings in two partial models belonging to two different model aspects. Homonymy also becomes obvious in discussions where a couple of model designers start arguing – just as the blind men in the elephant exemplum – not realizing that they use the same word with different meanings, that they relate different images to the same word.

It is always very difficult to deal with such semantic problems. They are not solvable, although one can do a lot to minimize their undesired effects. There are important methods to successfully treat multi-perspectivity within IS modeling:

- Any model has two sources: reference or generic models and immediate observation and interviews. The former are used for the standard structures of a company, the latter for its individual, particular structures. According to these two sources, terminology has to be treated in two different ways. For the standard structures, you should use standard terms from business, which are common and do not need any further explanations. With regard to the individual structures, the terminology used in the model has to be defined as exactly as possible and as "richly" as possible, so that each definition becomes transparent to other model designers, but also to the defining designer himself, as it discharges his memory. IT tools can support this **glossary of company-specific terminology**.
- The second method concerns the sequence you use to establish partial models. Always try to attach a partial model to its neighbors. Not every partial model is related to every other one, e.g., level 3 is not directly related to level 1 in the hierarchical decomposition of a process, but only to levels 2 and 4. Try to organize your modeling sequence so that you treat related, neighbored partial models in parallel. It will be easier to cope with the complexity of an enterprise if you use an **iterative, successive integration of neighbored perspectives** (partial models).

### 3.2.3 The main method to treat inconsistencies: the model designer's awareness

The human cognitive strategies cannot be changed fundamentally. Therefore, it is a basic epistemological demand that humans learn more and more how their cognitive strategies work and consciously deal with their consequences, in order to avoid their undesired effects. With regard to IS modeling, this was already shown

- for analogical thinking in Holl 2003,
- for gestalt-theoretical principles of thinking in Holl 2000 and
- for thinking in mayeutic cycles in Holl 1999.

With regard to multi-perspectivity, we repeat the result from 3.1.4: we have to face the fact that human thinking normally is **oligo-perspective**, that is, it can only deal with a few perspectives at the same time, and **not perfectly formal-logically harmonizing**, that is, the human logical-consistency verifier tolerates superficially undisturbing contradictions as well as homonymies and synonymies in natural languages.

The coordination of many perspectives in a model is a difficult task for humans. Up to some degree, it can be supported by IT tools, but as it is not solvable, **the model designers' awareness** is the best method to successfully fulfill this task.

Within IT instruction, the exemplum of the blind men and the elephant can be used for the demonstration and illustration of the problem field of multi-perspective thinking. It serves as an excellent pedagogic means to make model designers aware of it.

# 4. Appendix: texts of the exemplary story

## 4.1 Buddhist literature

### 4.1.1 The version from the *Pali Canon* (= *Tipitaka*): *Udâna* VI, 4; *Udâna* = *Tipitaka* II, 5, c

Thus have I heard. On a certain occasion, the Blessed One dwelt at Savatthi, in the Jetavana, the garden of Anāthapindika.

Now at that time a large number of Samanas, Brahmanas and wandering monks of various heretical sects, holding a variety of views, doubters on many points, having many diverse aspirations, and recourse to that which relates to various heresies, entered Savatthi for alms.

Some of these Samanas and Brahmanas held that the world is eternal and contended that this view was true and every other false.

Some said: the world is not eternal.

Some said: the world is finite.

Some said: the world is infinite.

Some said: the soul and the body are identical.

Some said: the soul and the body are not identical.

Some said: the Perfect One continues to exist after death.

Some said: the Perfect One does not continue to exist after death.

Some said: the Perfect One exists and does not exist after death.

Some said: the Perfect One neither exists nor does not exist after death.

Each contending their view was true and every other false.

These quarrelsome, pugnacious, cavilling monks wounded one another with sharp words (lit. mouth-javelins) declaiming: “such is the truth, such is not the truth: the truth is not such, such is the truth.”

And a number of Bhikkhus, robing themselves in the forenoon and taking their alms-bowls and tunics, entered Savatthi for alms and when they had returned from their rounds and finished their meal, they went to where the Blessed One was and drawing near, they saluted the Blessed One and sat down apart, and while thus sitting they said to the Blessed One: “Just now, Sire, a large number of Samanas and Brahmanas and wandering monks holding various

heresies entered Savatthi for alms, and they are disputing among themselves, saying: 'This is the truth, such is not the truth' etc. [as above. *Transl.*]"

"These heretical monks, O Bhikkhus, are blind, eyeless, they know not what is right, they know not what is wrong, they know not what is true, they know not what is false. These monks not perceiving what is right, not perceiving what is wrong, not perceiving what is true, not perceiving what is false, become disputatious, saying: 'such is the truth, such is not the truth' etc. [as above. *Transl.*]

In former times, O Bhikkhus, there was a King in this town of Savatthi. And the King, O Bhikkhus, called a man to him and said : 'Go, thou, and collect all the men born blind in Savatthi and bring them here.'

'Be it so, Lord' said that man in assent to the King and he went to Savatthi and he brought all the men born blind in Savatthi to where the King was and drawing near he said to the King: 'Lord, all the men blind from their birth in Savatthi are present.'

'Pray, then, bring an elephant before them.'

'Be it so, Lord' said that man in assent to the King and he brought an elephant into the presence of the blind men and said: 'This, O blind men, is an elephant.'

To some of the blind men he presented the head of the elephant, saying, 'Such, O blind men, is an elephant.'

To some he presented the body, saying: 'Such is an elephant.'

To some he presented the feet, saying: 'Such is an elephant.'

To some he presented the back, saying: 'Such is an elephant.'

To some he presented the tail, saying: 'Such is an elephant.'

To some he presented the hairy tuft of the tail, saying: 'Such is an elephant.'

The show-man, O Bhikkhus, having presented the elephant to these blind ones, went to where the King was and drawing near said to the King: "The elephant, Lord, has been brought The show-man, O Bhikkhus, having presented the elephant to these blind ones, went to where before the blind men, do now as seems fit."

And the King went to where the blind men were, and drawing near said to them: 'Do you now know what an elephant is like?'

'Assuredly, Lord: we now know what an elephant is like.'

'Tell me then, O blind men, what an elephant is like.'

And those blind men, O Bhikkhus, who had felt the head of the elephant, said: 'An elephant, Sir, is like a large round jar.'

Those who had felt its ears, said: 'it is like a winnowing basket.'

Those who had felt its tusks, said: 'it is like a plough-share.'

Those who had felt its trunk, said: 'it is like a plough.'

Those who had felt its body, said: 'it is like a granary.'

Those who had felt its feet, said: 'it is like a pillar.'

Those who had felt its back, said: 'it is like a mortar.'

Those who had felt its tail, said: 'it is a like a pestle.'

Those who had felt the tuft of its tail, said: 'it is like a broom.'

> And they all fought amongst themselves with their fists, declaring, 'such is an elephant, such is not elephant, an elephant is not like that, it is like this.' And the King, O Bhikkhus, was highly delighted.

In exactly the same way, O Bhikkhus, do these heretical people, blind and without insight, dispute among themselves saying 'this doctrine is true, every other is false'."

And the Blessed One in this connection, on that occasion, breathed forth this solemn utterance:

"Well is it known that some Samanas and Brahmanas,
Who attach themselves to methods of analysis,
And perceiving only one side of a case,
Disagree with one another."

(Strong 1902: 93-96)

A complete German translation of Udâna VI, 4 is given in Seidenstücker 1920: 73-77.

### 4.1.2 The Chinese version from the *Lieou tou tsi king* (*Tripitaka* VI, 5, p. 89)

Le Buddha dit aux bhikşus: «Ce n'est pas seulement dans la vie présente que les hérétiques sont inintelligents et enténébrés. O bhikşus, il y a de cela fort longtemps, dans cette région du Jambudvîpa, il y avait un roi nommé Face de miroir (Âdarçamukha); il récitait les livres essentiels du Buddha; ses connaissances étaient nombreuses comme les grains de sable du Gange. Quant à ses sujets, ministres ou gens du peuple, pour la plupart ils ne lisaient pas les (écrits bouddhiques) et portaient avec eux des livres mesquins; ils avaient foi dans la clarté du ver luisant et mettaient en doute l'éclat qui se projette au loin du soleil et de la lune; (le roi se servit) d'aveugles pour en tirer un apologue, car il désirait faire que ces gens renonçassent à aller sur des mares et naviguassent sur la grande mer;

> il ordonna donc à ses émissaires de parcourir le royaume pour rassembler ceux qui étaient aveugles de naissance et les amener à la porte du palais; ayant reçu cet ordre, les officiers prirent tous les aveugles du royaume et les firent venir au palais, puis ils annoncèrent qu'ils avaient trouvé tous les aveugles et que ceux-ci étaient maintenant au bas de la salle.
>
> Le roi dit: «Allez leur montrer des éléphants.» Les officiers obéirent à l'ordre royal; ils menèrent les aveugles auprès des éléphants et les leur montrèrent en guidant leurs mains; parmi les aveugles, l'un d'eux saisit la jambe d'un éléphant; un autre saisit la queue; un autre saisit la racine de la queue; un autre toucha le ventre; un autre, le côté; un autre, le dos; un autre prit une oreille; un autre, la tête; un autre, une défense; un autre, la trompe. Les aveugles, se tenant auprès des éléphants, se disputaient

tumultueusement, chacun d'eux disant qu'il était dans le vrai, et les autres non.

Les émissaires les ramenèrent alors vers le roi et le roi leur demanda: «Avez-vous vu les éléphants ?» Ils répondirent: «Nous les avons entièrement vus.» Le roi reprit: «À quoi ressemble un éléphant?»

Celui qui avait tenu une jambe répondit: «O sage roi, un éléphant est comme un tuyau verni.»

Celui qui avait tenu la queue dit que l'éléphant était comme un balai;
celui qui avait tenu la racine de la queue, qu'il était comme un bâton;
celui qui avait touché le ventre, qu'il était comme un tambour;
celui qui avait touché le côté, qu'il était comme un mur;
celui qui avait touché le dos, qu'il était comme une table élevée;
celui qui avait tenu l'oreille, qu'il était comme un van;
celui qui avait tenu la tête, qu'il était comme un gros boisseau;
celui qui avait tenu une défense, qu'il était comme une corne;

quant à celui qui avait tenu la trompe, il répondit: «O sage roi, l'éléphant est comme une grande corde.»

Et, de plus belle, ils se mirent à se disputer en présence du roi, disant: «O grand roi, l'éléphant est réellement tel que je le décris.» Le roi Face de miroir (Âdarçamukha) rit alors aux éclats

et dit: «Comme ces aveugles, comme ces aveugles vous êtes, vous tous qui n'avez pas vu les livres bouddhiques.» Puis il prononça cette gâthâ:

Maintenant, vous qui êtes une troupe d'aveugles,
vous disputez vainement et vous prétendez dire vrai;
ayant aperçu un point, vous dites que le reste est faux,
et à propos d'un éléphant vous vous querellez.

Il ajouta encore: «Ceux qui s'appliquent à l'étude des livres mesquins et qui n'ont pas vu que les livres bouddhiques sont d'une vérité et d'une rectitude si vastes que rien ne leur est extérieur, si hautes que rien ne les recouvre, ceux-là sont comme les gens privés d'yeux.» Alors tous, qu'ils fussent de condition haute ou de condition basse, récitèrent ensemble les livres bouddhiques.

Le Buddha dit aux bhikşus: «Le roi face de miroir c'était moi-même; quant aux gens privés de la vue, c'étaient ces brahmanes de la salle de conférences; en ce temps, ces gens étaient sans sagesse et, à cause de leur cécité, ils en arrivèrent à se disputer; maintenant, quand ils disputent, ils sont aussi dans l'obscurité et, à cause de leurs disputes, ils ne font aucun progrès.»
(Chavannes 1910-34: I 336-339, nr. 86)

The introducing story is not reproduced as it is similar to the one in the Buddhist original in 4.1.1.

A shortened French translation is given in Julien 1859: I 47-50.

# 4.2 Islamic-Sufic literature

## 4.2.1 Gazzali

### 4.2.1.1 Gazzali's version from the *Ihyâ ulûm al-dîn* 'Revival of the religious sciences', book IV

There are three slightly different quotations: *Ihyâ* IV 7, 10 f. (*Kitâb al-tawba* 'book of the expiation') in Nicholson 1925-1940: VIII 34 and p. 7, 3 in Obermann 1921: 212. Meier 1946: 166 quotes *Ihyâ* IV, p. 6 at the end of the section *Bayān wujūb al-tawba* 'illustration of the necessity of expiation'.

If the gates of heaven were opened to them and they could look into the supersensory world and the world of essence, it would become evident to them that each of the theories is right in a certain sense, but all are inadequate. It would become clear that none of them had penetrated to the core of the matter and knew it fully, that the full truth can be known only if light streams in through a window opening out on the supersensory world.
(*Ihya* IV, p. 6, 18-20 according to Meier 1954: 167)

> A community of blind men once heard that an extraordinary beast called an elephant had been brought into the country. Since they did not know what it looked like and had never heard its name, they resolved to obtain a picture, and the knowledge they desired, by feeling the beast – the only possibility that was open to them! They went in search of the elephant, and when they had found it, they felt its body. One touched its leg, the other a tusk, the third an ear, and in the belief that they now knew the elephant, they returned home. But when they were questioned by the other blind men, their answers differed. The one who had felt the leg maintained that the elephant was nothing other than a pillar, extremely rough to the touch, and yet strangely soft. The one who had caught hold of the tusk denied this and described the elephant as hard and smooth, with nothing soft or rough about it, moreover the beast was by no means as stout as a pillar, but rather had the shape of a post [ʻamūd]. The third, who had held the ear in his hands, spoke: "By my faith, it is both soft and rough." Thus he agreed with one of the others, but went on to say: "Nevertheless, it is neither like a post nor a pillar, but like a broad, thick piece of leather." Each was right in a certain sense, since each of them communicated that part of the elephant he had comprehended, but none was able to describe the elephant as it really was; for all three of them were unable to comprehend the entire form of the elephant.
> (Meier 1954: 167 f.)

#### 4.2.1.2 Gazzali's reference from *Kimiya'e Saadat* 'The Alchemy of happiness', Chapter 2

As regards the recognition of God's providence, there are many degrees of knowledge. The mere physicist is like an ant who, crawling on a sheet of paper and observing black letters spreading over it, should refer the cause to the pen alone. The astronomer is like an ant of somewhat wider vision who should catch sight of the fingers moving the pen, i.e., he knows that the elements are under the power of the stars, but he does not know that the stars are under the power of the angels. Thus, owing to the different degrees of perception in people, disputes must arise in tracing effects to causes. Those whose eyes never see beyond the world of phenomena are like those who mistake servants of the lowest rank for the king. The laws of phenomena must be constant, or there could be no such thing as science; but it is a great error to mistake the slaves for the master. As long as this difference in the perceptive faculty of observers exists, disputes must necessarily go on.

> It is as if some blind men, hearing that an elephant had come to their town, should go and examine it. The only knowledge of it which they can obtain comes through the sense of touch: so one handles the animal's leg, another his tusk, another his ear, and according to their several perceptions, pronounce it to be a column, a thick pole, or quilt, each taking a part for the whole.

So the physicist and astronomer confound the laws they perceive with the Lawgiver.
(Field 1910: 35 f.)

### 4.2.2 Sanai' s version from *Hadîqat al-haqîqat* 'The walled garden of the truth' l 8, 10 - l 9, 10

ON THE BLIND MEN AND THE AFFAIR OF THE ELEPHANT

> There was a great city in the country of Ghūr, in which all the people were blind. A certain king passed by that place, bringing his army and pitching his camp on the plain. He had a large and magnificent elephant to minister to his pomp and excite awe, and to attack in battle. A desire arose among the people to see this monstrous elephant, and a number of the blind, like fools, visited it, every one running in his haste to find out its shape and form. They came, and being without the sight of their eyes groped about it with their hands; each of them by touching one member obtained a notion of some one part; each one got a conception of an impossible object, and fully believed his fancy true.
>
> When they returned to the people of the city, the others gathered round them, all expectant, so misguided and deluded were they. They asked about the appearance and shape of the elephant, and what they told all listened to. One asked him whose hand had come upon its ear about

the elephant; he said, It is a huge and formidable object, broad and rough and spreading, like a carpet. And he whose hand had come upon its trunk said, I have found out about it; it is straight and hollow in the middle like a pipe, a terrible thing and an instrument of destruction. And he who had felt the thick hard legs of the elephant said, As I have it in mind, its form is straight like a planed pillar.

Every one had seen some one of its parts, and all had seen it wrongly. No mind knew the whole, – knowledge is never the companion of the blind; all, like fools deceived, fancied absurdities.

Men know not the Divine essence; into this subject the philosophers may not enter.
(Stephenson 1910: 13)

Further English translations: into a poem in Browne 1906: II 319 f., into prose in Shah 1967: 25.

The version in Shah 1979: 84 is by mistake assigned to Rumi instead of Sanai.

### 4.2.3 Rumi's version from the *Mathnawi* III v. 1259-1270 (= story 5)

THE DISAGREEMENT AS TO THE DESCRIPTION AND SHAPE OF THE ELEPHANT

The elephant was in a dark house: some Hindús had brought it for exhibition.

In order to see it, many people were going, every one, into that darkness.

As seeing it with the eye was impossible, (each one) was feeling it in the dark with the palm of his hand.

The hand of one fell on its trunk: he said, "This creature is like a water-pipe."

The hand of another touched its ear: to him it appeared to be like a fan.

Since another handled its leg, he said, "I found the elephant's shape to be like a pillar."

Another laid his hand on its back: he said, "Truly, this elephant was like a throne."

Similarly, whenever any one heard (a description of the elephant), he understood (it only in respect of) the part that he had touched.

On account of the (diverse) place (object) of view, their statements differed: one man entitled it "dál", another "alif" (i.e. crooked or straight like the letters' forms in the Arabic alphabet).

If there had been a candle in each one's hand, the difference would have gone out of their words.

The eye of sense-perception is only like the palm of the hand: the palm hath not power to reach the whole of him (the elephant).

The eye of Sea (i.e. the eye of reality) is one thing, and the foam (i.e. phenomena) another: leave the foam and look with the eye of the Sea.
(Nicholson 1925-1940: IV 71 f.)

Further English translations: Nicholson 1931: 111, tale XXXIII and Whinfield 1898: 122, story V.

## 4.2.4 Nasafi's versions

### 4.2.4.1 Nasafi's version from *Kashf al-haqâ'iq* 'The unveiling of realities' or *Kanz al- haqâ'iq* 'The treasure of realities / truths' (230a 5) 230b 6 – 231a 17

The number of different sects is known to no one. And therefore, the origins of the sects are also unknown. But this much is certain: The source of their disparity is this: after men had heard through the prophets of a Lord over the things of existence, each man formed his ideas concerning the essence and attributes of this Lord. When they exchanged their ideas, each had a different conception. Each one found fault with the next, and began to advance proofs in support of his own view and in confutation of the opposing conception. In so doing, they all believed their proofs to be accurate and sound. But this very belief was a fallacy; for all men believe that *via rationis una* [i.e., that the truth is one]. How then, if the *via rationis* cannot be two, can seventy-three [the traditional number of Moslem sects] or even more beliefs be all sound? (*Kashf* 230a 5 - 230b 4 according to Meier 1946: 162 f.)

Once there was a city, the inhabitants of which were all blind. They had heard of elephants and were curious to see [sic] one face to face. They were still full of this desire when one day a caravan arrived and camped outside the city. There was an elephant in the caravan. When the inhabitants of the city heard there was an elephant in the caravan, the wisest and most intelligent men of the city decided to go out and see the elephant. A number of them left the city and went to the place where the elephant was. One stretched out his hands, grasped the elephant's ear, and perceived something resembling a shield. This man decided that the elephant looked like a shield. Another stretched out his hands, grasped the elephant's trunk, and perceived something resembling a club [*'amūd*]. This man decided that the elephant looked like a club. A third stretched out his hands, grasped the elephant's leg, and perceived something like a pillar [*'imād*]. He decided that the elephant looked like a pillar. A fourth stretched out his hands, grasped the elephant's back, and perceived something like a seat [*takht*]. He decided that the elephant looked like a seat. Delighted, they all returned to the city. After everyone had gone

back to his quarter, the people asked: “Did you see the elephant?” Each one answered yes. They asked: “What does he look like? What kind of shape has he?” Then one man in his quarter replied: “The elephant looks like a shield.” And the second man in the second quarter: “The elephant looks like a club.” The third man in the third quarter: “The elephant looks like a pillar.” And the fourth man in the fourth quarter: “The elephant looks like a seat.” And the inhabitants of each quarter formed their opinion in accordance with what they had heard.

Now when the different conceptions came into contact with one another, it became evident that they were contradictory. Each blind man found fault with the next, and began to advance proofs in support of his own view and in confutation of the views of the others. They called these proofs rational and scriptural proofs. One said: “It is written that in war the elephant is sent out ahead of the army. Consequently the elephant must be a kind of shield.” The second said: “It is written that in war the elephant hurls himself at the hostile army and that the hostile army is thereby shattered. Consequently the elephant must be a kind of club.” The third said: “It is written that the elephant carries a weight of a thousand men and more without effort. Consequently the elephant must be a kind of pillar.” The fourth said: “It is written that so and so many people can sit in comfort on an elephant. Consequently the elephant must be a kind of seat.”

Now you yourself consider whether with such proofs they can ever penetrate to the object of their demonstrations, the elephant, and whether with such premises they can ever arrive at the correct conclusion. Every rational man knows that the more proofs of this sort they advance, the farther they will be from knowledge of the elephant, that they can never arrive at the object of their demonstrations, the elephant, and consequently that the conflict in opinions will never be relieved, but will become more and more pronounced.

But know this: Suppose by the grace of God one of them is made seeing so that he perceives and knows the elephant as it really is, and says to them: “In what you have said of the elephant, you have indeed grasped some aspect of the elephant, but you do not know the rest. God has given me sight, I have seen and come to know the elephant as it really is.” They will not even believe the seeing man, but will say: “You claim that God has given you sight, but that is only your imagination. Your brain is defective, and madness assails you. It is we who are the seeing.” Only some few accept the word of the seer, for it is written in the Koran: “But few of my servants are the thankful” [Sura 34:13]. The others persist in their stupidity coupled with arrogance, refuse to be instructed, and call those among them who hear and accept the word of the seer, and who agree with the seer, unbelievers and heretics. But this only shows that “to hear about a thing is not the same as to see it for yourself.”

(Meier 1954: 162-165)

German translation: Meier 1946: 170-173.

#### 4.2.4.2 Nasafi's version from *Tanzîl al-arwâh* 'Sending down the souls' 95a 2 – 96b 7 (96b 12).

> "The legend is related in almost literally the same version in Tanzīl, 95a 2-96b 7 (first aṣl), but with the difference that here the appearance of the seer is part of the legend and is narrated in the past: «But when by the grace of God, one among them had been made seeing. etc.» The address to the reader interpolated before this passage is also present."

This story refers to those men who, in dealing with the intelligible world, proceed by rational thought and demonstrations; for reason has different stages, and the wisdom that lies in things is infinite and unfathomable. But it applies also to those of supersensory perception and sight, in their dealing with the object of supersensory perception [*makshūfāt*]; for supersensory perception also has stages, and God's self-revelation in things is infinite and unfathomable. Of a hundred thousand who enter upon this path, one attains to the goal and experiences grace. All others remain at the way stations and take the way station for the goal. (*Tanzīl* 96b 7-12.)
(Meier 1954: 165, note 40)

German translation: Meier 1946: 173.

# 4.3 Hindu and Indic literature

## 4.3.1 Old Javanese Shivaist version from the *Vrhaspatitatva*, Introduction 1-5

Der auf dem lieblichen Gipfel des Kailāsa sich befindende Baheśvara tat so dem Vrhaspati gegenüber des allerhöchsten Śiva-tattva Erwähnung. //1//

Bhatāra Iśwara befand sich auf dem Gipfel des Kailāsa-Berges und teilte den Göttern insgesamt die Heiligen Lehren mit. Nach einiger Zeit wurden ihnen Lehrbücher gegeben, mittels derer sie Bhatāra Paramakārana in seinem Wesen eig. verehren sollten. Nun war da ein Asket im Himmel mit Namen Bhagawān Wrhaspati; der trat zu dieser Zeit vor und verehrte Bhatāra … [Er] fragte nach dem Grundgehalt aller heiligen Lehren mit den Worten:

Erhabener Gott der Götter, anfangsloser Höchster Herr, verkünde die gesamte Wahrheit, erfreue (das Weltall) mit allem, was sich bewegt und nicht bewegt. //2// Mit Verlaub, o Herr, (möge Eurem Sohne Gnade erwiesen werden) möge ihm nun die vollständige heilige Lehre mitgeteilt werden, die Ursache, weshalb ihr, o Herr, ihre Unterarten durch eure Mitteilungen an alle Götter insgesamt zahlreich gemacht habt. Es gibt die sogenannte Śaiva(-Lehre), es gibt die sogenannte Pāśupata(-Lehre), es gibt die sogenannte Alepaka(-Lehre). Diese alle zusammen sind von Euch, o Herr, jede einzelne in anderer Form mitgeteilt worden, und obendrein sind auch die Lehrbücher von vielen Arten. Was ist der

Sinn hiervon, (was ist) die Ursache, dass ihr, o Herr, die Wege und Lehren viele habt werden lassen?

Also sprach Bhagawān Wrhaspati. Bhatāra antwortete und sprach:

… schwierig (zu erfassen) ist die Natur der höchsten Wahrheit, deshalb ist sie in vielen Lehren befasst (dargeboten); jeweils das wozu er immer imstande ist durch seine Liebe zu Bhatāra, das wird von ihm genommen und dient ihm als Wissen zur Erfassung des Wesens Bhatāras. Das ist die Ursache für die Vielheit der Lehren.

Also sprach Bhatāra. Bhagawān Wrhaspati antwortete und sprach:

Mit Verlaub, o Herr, welche doch ist die vorzüglichste Art des heiligen Wissens, die Śaiva-Lehre oder die Pāśupata-Lehre oder die sogenannte Alepaka-Lehre?

Bhatāra antwortete und sprach:

Nicht ist weniger, nicht ist mehr als der Himmel (d.h. die Erlösung), wenn sie als gleich betrachtet werden von denen, die diese Wege einschlagen, ist doch das in Frage stehende Wissen in gleicher Weise als vollkommen schön dort in den drei Wegen angeordnet worden. In die Irre gehen sie dagegen in der Auffassung des Wissens (so zwar): Niedriger sind die anderen (Arten des Wissens), so ist das die Ursache für das verwirrte Wissen, das sich zu irren wünscht (das seinem eigenen Wunsche folgend in die Irre geht).

Also sprach Bhatāra. Es antwortete Bhagawān Wrhaspati:

Was ist doch das, was ihr, o Herr, als Verwirrung bezeichnet? Alles, was die heiligen Lehrbücher verkünden, wird ja von den Weisen befolgt, wenn sie sich der reinen Gottesliebe befleißigen, und das verursacht das, was ihr, o Herr, als Verwirrung bezeichnet. Möge Eurem Sohne die Gnade erwiesen werden, möge ihm wahrheitsgemäß Belehrung zuteil werden.

Also sprach Bhagawān Wrhaspati. Es antwortete Bhatāra und sprach: //3//

> Es waren einmal Blinde, die von Unwissenheit erfüllt waren und die wünschten, das Wissen hinsichtlich des Elefanten mitgeteilt zu erhalten. Infolge ihres starken Verlangens nach dem Wissen baten sie dann, dass die Menschen, die sehen könnten, sie ihn betasten ließen. Jeder einzelne von ihnen allen aber betastete ihn an einer anderen Stelle. Der eine betastete seinen Kopf und sagte: Der Elefant gleicht einem Topfe. Ein anderer betastete sein Ohr und sagte: Der Elefant gleicht einem Fächer. Ein anderer betastete den Stoßzahn und sagte: Der Elefant gleicht gedrechseltem Holz. Ein anderer betastete den Rüssel und sagte: Der Elefant gleicht einer Schlange. Ein anderer betastete den Bauch und sagte: Der Elefant gleicht dem Abhang (eines Berges). Ein anderer betastete den Schwanz und sagte: Der Elefant gleicht einer Flöte. Jeder Teil wurde da von ihnen einzeln betastet, doch erfuhren sie nichts darüber, wem der Elefant gleich sähe, (nichts) hinsichtlich seiner Höhe und seiner Gestalt, seines Sinnes und der Art, sich zu verhalten; sie erfuhren es nicht, weil sie blind waren, nur das, was von ihnen betastet worden war, war der Gegenstand ihres Wissens.

Ganz genau so, wie es sich mit dem Wesen der Blinden verhält, dass sie nicht wussten, wem der Elefant gleich wäre, so verhält es sich auch mit den Menschen; was man Verblendung nennt, das dient ihnen als Finsternis; Blindheit ist die Bezeichnung dafür. Der innere Gehalt der Wahrheit wird als der Körper des Elefanten bezeichnet. Was mit dem Kopfe, dem Stoßzahn, dem Rüssel, dem Bauche, dem Fuß [sic!] und dem Schwanze verglichen wird, das sind die Lehrbücher und die Lehren. Ihrer nun sind viele, und sie sind von der heiligen höchsten Wahrheit erfüllt, darum verursachen sie Verwirrung. Es ist verblendet, es bewegt sich ziellos überall hin und her, weiß nicht, wo Norden und Süden sind, weiß nicht um Wesentliches und Besonderes (d.h. minder Wesentliches), weiß nicht um Niedrig und Hoch, weiß nicht um Weniger und Mehr, weiß nicht um Herausgehen und Hineingehen; das Wissen von solcher Art, das nennt man verwirrt, da es sein Ziel nicht erreicht.

Also sprach Bhatāra. Es antwortete Bhagawān Wrhaspati und sprach:

Erhabener, der du die gesamte höchste Wahrheit kennest, anfangsloser Höchster Herr, von dir begehre ich zu hören, o Erhabener, diese höchste Wahrheit in ihrer Gesamtheit. //5//
(Zieseniss 1936: I 71, 73-75)

We do not translate the clumsy German translation above into English. Instead, we quote Alexander Zieseniss's brief and interpreting translation:

> "The blind men asked the seeing to allow them to touch the elephant. Each of the blind men touched another part of the elephant. None of them could grasp the true form of the elephant, as they only felt individual parts of its body. Six correspondences are listed: head – pot, ear – fan, tusk – curved wood, trunk – snake, belly – slope of a mountain (not sure), tail – flute.

There are many religious doctrines; all of them are inspired by the holy truth (that is they contain a part or an aspect of the supreme truth) and, therefore, cause deep confusion (if one does not recognize the imperfection of the responsible scholars). Vrhaspati then asks for the presentation of the really important doctrine."
(Zieseniss 1945: 268 f.; selected translation by AH)

### 4.3.2 Ramakrishna

(*To the goswāmi*) "With sincerity and earnestness one can realize God through all religions. The Vaishnavas will realize God, and so will the Śāktas, the Vedāntists, and the Brāhmos. The Mussalmāns and Christians will realize Him too. All will certainly realize God if they are earnest and sincere.

"Some people indulge in quarrels, saying, 'One cannot attain anything unless one worships our Krishna', or, 'Nothing can be gained without the worship of Kāli, our Divine Mother', or, 'One cannot be saved without accepting the Christian religion.' This is pure dogmatism. The dogmatist says, 'My religion

alone is true, and the religions of others are false.' This is a bad attitude. God can be reached by different paths.

"Further, some say that God has form and is not formless. Thus they start quarrelling. A Vaishnava quarrels with a Vedāntist.

"One can rightly speak of God only after one has seen Him. He who has seen God knows really and truly that God has form and that He is formless as well. He has many other aspects that cannot be described.

> "Once some blind men chanced to come near an animal that someone told them was an elephant. They were asked what the elephant was like. The blind men began to feel its body. One of them said the elephant was like a pillar; he had touched only its leg. Another said it was like a winnowing-fan; he had touched only its ear. In this way the others, having touched its tail or belly, gave their different versions of the elephant.

"Just so, a man who has seen only one aspect of God limits God to that alone. It is his conviction that God cannot be anything else.

(*To the goswāmi*) "How can you say that the only truth about God is that He has form? It is undoubtedly true that God comes down to earth in a human form, as in the case of Krishna. And it is true as well that God reveals Himself to His devotees in various forms. But it is also true that God is formless; He is the Indivisible Existence-Knowledge-Bliss Absolute. He has been described in the Vedas both as formless and as endowed with form. He is also described there both as attributeless and as endowed with attributes.
(Nikhilananda 1942: 191)

## 4.3.3 Versions reported by Robinson

### 4.3.3.1 Version 1 reported by Robinson

BLIND RELIGION

> Several persons, blind from birth, met in one place. They said to an elephant-driver that they wanted to see an elephant. He stopped one, and told them to look at it. "Good," said they; and one blind man felt the foot, another the trunk, a third the ear, a fourth the tail. When they had accomplished their examination, they began to speak to one another of the nature of the elephant. He who had felt the foot said, "The elephant is like a mortar for pounding rice." He who had handled the trunk said, "It is like a pestle for beating grain." He who had examined the ear said, "It is like a winnow for sifting corn". He who had laid hold of the tail said, "It is like a broom." Thus answering one another, they quarrelled till they parted.

So sectaries, biassed by their respective systems, dispute about the nature of God, which the mind cannot reach.
(Robinson 1885: 29 f.)

#### 4.3.3.2 Version 2 reported by Robinson

Six blind men once described an elephant
That stood before them all. One felt the back.
The second noticed pendent ears. The third
Could only find the tail. The beauteous tusks
Absorbed the admiration of the fourth.
While, of the other two, one grasped the trunk,
The last sought for small things, and found
Four thick and clumsy feet. From what each learned,
He drew the beast. Six monsters stood revealed.

Just so the six religions learned of God,
And tell their wondrous tales. Our God is One.
(Robinson 1885: 30)

### 4.3.4 Version reported by Shyama Shankar

THE BLIND LEAD THE BLIND

There lived in a village four blind men, who had often heard an elephant talked of, and wondered greatly what it could possibly be like.

So, when one day an elephant was passing through the village, they begged of the rider to give them an opportunity of knowing it by touch. The rider allowed them to do so, and the four blind men were right glad to be led near to the animal, and to feel its stupendous body with their hands.

The elephant was soon on the move again, and one of the blind men began to talk of his sensational experience thus: "What a huge thing an elephant is! It is just like a pillar, or a thick round log."

"You are mistaken, my friend," said another blind man, "you must have felt a pillar and not an elephant. The elephant is like a thick rope with hair at the end."

"Both of you are deceived," said the third blind man, "You must surely have felt something else than an elephant, which is surely like a fan."

"My dear friends," said the fourth blind man, "all of you are quite wrong. How on earth could you feel an elephant if you describe it like that? It is neither a log, nor a rope, nor a fan, but a vast mass of flesh without shape or size, and without beginning or end."

"Yours is the most delusive idea," said the first blind man. "Never has a person described an elephant as being endless."

Thus they had a serious dispute among themselves. None would yield to the other.

A wise man was standing hard by, listening to the hot dispute with keen interest. When the disputants became wild with fury and came to blows, he approached them and begged them to be quiet.

"Hold, brothers," he exclaimed. "Do not quarrel but listen to me. You all are right and you all are wrong. When the first man says that the elephant is like a log, he means only the leg of the animal, the second man's rope represents its tail, the fan of the third man answers to its ear, and the fourth man is evidently describing its body. So you see you have had only the knowledge of *parts*, but you are disputing about the *whole*.

"Anyhow, you teach me a grand lesson: We are all blind in matters of religious truths, yet we would seek to lead others in realising the Grand Mysterious Being."
(Shyama Shankar 1924: 153 f.)

# 4.5 Versions from modern poetry

## 4.5.1 John Godfrey Saxe

THE BLIND MEN AND THE ELEPHANT – A HINDOO FABLE

It was six men of Indostan
To learning much inclined,
Who went to see the Elephant
(Though all of them were blind),
That each by observation
Might satisfy his mind.

The *First* approached the Elephant,
And happening to fall
Against his broad and sturdy side,
At once began to bawl:
"God bless me! but the Elephant
Is very like a wall!"

The *Second*, feeling of the tusk,
Cried, "Ho, what have we here,
So very round and smooth and sharp?
To me 't is mighty clear
This wonder of an Elephant
Is very like a spear!"

The *Third* approached the animal,
And happening to take
The squirming trunk within his hands,
Thus boldly up and spake:
"I see," quoth he, "the Elephant
Is very like a snake!"

The *Fourth* reached out an eager hand,
And felt about the knee
"What most this wondrous beast is like
Is mighty plain," quoth he:
"'T is clear enough the Elephant
Is very like a tree!"

The *Fifth*, who chanced to touch the ear,
Said: "E'en the blindest man
Can tell what this resembles most;
Deny the fact who can,
This marvel of an Elephant
Is very like a fan!"

The *Sixth* no sooner had begun
About the beast to grope,
Than, seizing on the swinging tail
That fell within his scope,
"I see," quoth he, "the Elephant
Is very like a rope!"

And so these men of Indostan
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right,
And all were in the wrong!

MORAL
So oft in theologic wars,
The disputants, I ween,
Rail on in utter ignorance
Of what each other mean,
And prate about an Elephant
Not one of them has seen!
(Saxe 1882: 111 f.)

### 4.5.2 Leo Nicolayevich Tolstoy (= Lev Nikolaevič Tolstoj)

Version from *Povesti i rasskazy r. 1872-1886* 'Novels and stories 1872-1886'

THE EMPEROR AND THE ELEPHANTS (PARABLE)

An emperor from India gave an order to pick up all the blind men and, when they had arrived, to show them his elephants. The blind men went into the stable and started to touch the elephants. One touched the leg, the second the tuft of the tail, the third the tail, the forth the belly, the fifth the back, the sixth the ears, the seventh the tusks, the eighth the trunk.

Then the king called the blind men to him and asked: "What are my elephants like?"

One blind man said: "Your elephants are like pillars." This blind man had touched the legs.

The second blind man said: "They are like brooms." This one had touched the tuft of the tail.

The third said: "They are like branches." This one had touched the tail.

The one who had touched the belly said: "Elephants are like a mound of earth."

The one who had touched the sides said: "They are like a wall."

The one who had touched the back said: "They are like a mountain."

The one who had touched the ears said: "They are like cloth."

The one who had touched the head said: "They are like a mortar."

The one who had touched the tusks said: "They are like horns."

The one who had touched the trunk said: "They are like a thick rope."

And all the blind men started to argue and to quarrel.

(Tolstoy 1963: X 198-199 translated by AH from the Russian original)

### 4.5.3 Carl Sandburg

ELEPHANTS ARE DIFFERENT TO DIFFERENT PEOPLE

Wilson and Pilcer and Snack stood before the zoo elephant.

Wilson said, "What is its name? Is it from Asia or Africa? Who feeds it? Is it a he or a she? How old is it? Do they have twins? How much does it cost to feed? How much does it weigh? If it dies, how much will another one cost? If it dies, what will they use the bones, the fat, and the hide for? What use is it besides to look at?"

Pilcer didn't have any questions; he was murmuring to himself, "It's a house by itself, walls and windows, the ears came from tall cornfields, by God; the architect of those legs was a workman, by God; he stands like a bridge out across deep water; the face is sad and the eyes are kind; I know elephants are good to babies."

Snack looked up and down and at last said to himself, "He's a tough son-of-a-gun outside and I'll bet he's got a strong heart, I'll bet he's strong as a copper-riveted boiler inside."

They didn't put up any arguments.

They didn't throw anything in each other's faces.

Three men saw the elephant three ways

And let it go at that.

They didn't spoil a sunny Sunday afternoon;

"Sunday comes only once a week," they told each other.

(Sandburg 1950: 628 f.)

### 4.5.4 Nikos Kazantzakis

Version from *'O Khristòs xanastaurónetai* 'The Greek passion'

Once upon a time, there was a little village, lost in the desert. All its inhabitants were blind. A great king passed by, followed by his army. He was riding an enormous elephant. The blind people herald of it. They had heard a great deal about elephants and were moved by a great desire to touch this fabulous animal, to get an idea of what it was. About ten of them, let's say the notables, set out. They begged the king for permission to touch the elephant. – "I give you permission, touch it!" said the king. One of them touched its trunk, another its foot, another its flanks, one was raised up so that to feel its ears, another seated on its back and given a ride. The blind men went back enchanted to their village. All the other blind people crowded round them, asking them greedily what sort of thing this fantastic beast, the elephant, was. The first said: "It is a big pipe that raises itself mightily, curls, and woe to you if it catches you!" Another said: "It is a hairy pillar." Another: "It is a wall, like a fortress, and it, too, is hairy." Another, the one who had felt the ear: "It's not a wall at all; it's a carpet of thick wool coarsely worked, which moves when you touch it." And the last cried: "What's that nonsense you're telling? It's an enormous walking mountain."

(Kazantzakis 1954: middle of Chapter 7, quoted from Theodorakis 2001: 13)

The four friends laughed. "The blind people, that's us," said Giannakos. "You are right, forgive me. We are walking around God's little toe and say: 'God is as hard as a rock.' Why? 'cause we don't get any further."

(continued; translated from the German version by AH)

### 4.5.5 Ed Young

SEVEN BLIND MICE

One day seven blind mice were surprised to find a strange Something by their pond.

"What is it?" they cried, and they all ran home.

On Monday, Red Mouse went first to find out. "It's a pillar," he said. No one believed him.

On Tuesday, Green Mouse set out. He was the second to go. "It's a snake," he said.

"No," said Yellow Mouse on Wednesday. "It's a spear." He was the third in turn.

The fourth was Purple Mouse. He went on Thursday. "It's a great cliff," he said.

Orange Mouse went on Friday, the fifth to go. "It's a fan!" he cried. "I felt it move."

The sixth to go was Blue Mouse. He went on Saturday and said, "It's nothing but a rope."

But the others didn't agree. They began to argue. "A snake!" "A rope!" "A fan!" "A cliff!"

Until on Sunday, White Mouse, the seventh mouse, went to the pond. When she came upon the Something, she ran up one side, and she ran down the other. She ran across the top and from end to end. "Ah," said White Mouse. "Now, I see.

The Something is
as sturdy as a pillar,
supple as a snake,
wide as a cliff,
sharp as a spear,
breezy as a fan,
stringy as a rope,
but altogether the Something is
an elephant!"

And when the other mice ran up one side and down the other, across the Something from end to end, they agreed. Now they saw, too.

The Mouse Moral: Knowing in part may make a fine tale, but wisdom comes from seeing the whole.

(To Wang Kwong-Mei, who opened my eyes to the joy of knowledge and wisdom in those trying years.)

(Young 1992)

# 5. Bibliography

## 5.1 General literature

*Aarne, Antti; Thompson, Stith* (1961): The types of the folk tale. = Folklore Fellows Communications (Helsinki) 184.

*Becker, Jörg* (1987): Von Ganesha und Babar, von Jacob Grimm und Theodor W. Adorno. Prolegomena zu einer Imagologie des Elefanten in Fabel und Märchen, in alten und neuen Mythen. Zeitschrift für Kulturaustausch 37, 617 f.

*Taylor, Ascher* (1951): English riddles from oral tradition. Berkeley.

*Thompson, Stith* (1966): Motif-index of folk literature. Bloomington, 2nd ed.

*Tworuschka, Udo* (1994): Antrittsvorlesung zur Berufung auf den Lehrstuhl für Religionswissenschaft an der Friedrich-Schiller-Universität Jena, http://www.uni-jena.de/theologie/Fachgebiete/Religionswissenschaft/f_antritt.html.

## 5.2 Buddhism

*Chavannes, Edouard* (ed.) (1910-1934): Cinq cent contes et apologues extraits du Tripitaka chinois et traduits en français. 4 vol. Paris.

*Davids, Thomas William Rhys* (1899): Dialogues of the Buddha. 2 vol. London.

*Davids, Thomas William Rhys* (1911): Does Al-Ghazzali use an Indian metaphor? Journal of the Royal Asiatic Society 9, 200-201.

*Glasenapp, Helmuth von* (1929): Die Literaturen Indiens von ihren Anfängen bis zur Gegenwart (Handbuch der Literaturwissenschaft). Potsdam.

*Julien, Stanislas* (ed.) (1859): Les Avadânas, contes et apologues indiens inconnus jusqu'à ce jour. Paris.

*Seidenstücker, Karl* (ed.) (1920): Udâna. Das Buch der feierlichen Worte des Erhabenen. Eine kanonische Schrift des Pâli-Buddhismus. Augsburg.

*Strong, Dawsonne Melancthon* (ed.) (1902): The Udâna or the solemn utterances of the Buddha. London.

## 5.3 Islam

*Boyle, John Andrew* (ed.) (1976): Farîd al-Dîn 'Attâr, The Ilâhî-Nâma or Book of God. Translated from the Persian. Manchester.

*Browne, Edward Granville* (1906): A literary history of Persia. London [= Cambridge 1951-1953].

*Field, Claud* (ed.) (1910/11): Al-Ghazzali, The alchemy of happiness. Translated from the Hindustani [sic!]. London [= London 1980].

*Meier, Fritz* (1954): The problem of nature in the esoteric monism of Islam. In Campbell, Joseph (ed.): Papers from the Eranos yearbooks. Eranos 1. Spirit and Nature. Bollingen

Series XXX. New York 149-203 [= Princeton NJ 1982, 149-203]. Original: Meier (1946).
*Meier, Fritz* (1946): Das Problem der Natur im esoterischen Monismus des Islams. Eranos Jahrbuch 14 [Zürich 1947] 149-227 (cf. www.ub.unibas.ch/spez/meier/schriften.htm).
*Nicholson, Reynold A.* (ed.) (1925-1940); Rumi, Mathnawi. London.
*Nicholson, Reynold A.* (ed.) (1931): Tales of mystic meaning being selections from the Mathnawî of Jalâl-ud-Dîn Rûmî. London.
*Obermann, J.* (1921): Der philosophische und religiöse Subjektivismus Ghazâlîs – Ein Beitrag zum Problem der Religion. Wien / Leipzig.
*Shah, Idries* (1967): Tales of the Dervishes – Teaching-stories of the Sufi Masters over the past thousand years. London [= London 1993].
*Shah, Idries* (1979): World Tales. New York, London.
*Stephenson, J.* (ed.) (1910): The first book of the Hadîqatu'l-Haqîqat, or the enclosed garden of the truth, of the Hakim Abû'L-Madj Madjûd Sanâ'î of Ghazna. Calcutta.
*Whinfield, E. H.* (ed.) (1898): Rumi, Masnavi i ma'navi. London 2nd ed. [London 1st ed. 1887].

## 5.4 Hinduism

*Griffith, Ralph T. H.* (ed.) (1889): The hymns of the Rigveda. Benares 1st ed. [= Varanasi (India) 4th ed. 1963].
*Müller, F. Max* (ed.) (1879): The Upanishads. Oxford [= Delhi 1965].
*Nikhilananda, Swami* (1942): The Gospel of Sri Ramakrishna. Translated into English with an Introduction. Madras [= New York 1973].
*Robinson, Edward Jewitt* (1885): Tales and poems from South India. London.
*Shyama-Shankar (Syama-Sankara), Pandit* (1924): Wit and wisdom of India – Collection of humorous folk-tales of the court and country-side current in India. London [= New York 1934].
*Thompson, Stith* (1960): Types of India oral tales. = Folklore Fellows Communications (Helsinki) 180.
*Thompson, Stith; Balys, Jonas* (1958): The oral tales of India. Bloomington.
*Zieseniss, Alexander* (1936): Das Wrhaspatitatwa – Untersuchungen über Formen und Entwicklungsgeschichte des nachpurānischen Śivaismus in Vorderindien und auf Java. Hamburg, unpublished manuscript (Habilitationsschrift).
*Zieseniss, Alexander* (1945): Zwei indische Lehrerzählungen im Islâm. Zeitschrift der deutschen morgenländischen Gesellschaft 99 (1945-1949) 267-273.

## 5.5 Middle Ages[34]

*Blumenberg, Hans* (1981): Die Lesbarkeit der Welt. Frankfurt.
*Fromm, Hanns; Harms, Wolfgang; Ruhberg, Uwe* (1975): Verbum et Signum. Festschrift für Friedrich Ohly. München.
*Ohly, Friedrich* (1977): Schriften zur mittelalterlichen Bedeutungsforschung. Darmstadt.
*Weddige, Hilkert* (2001): Einführung in die germanistische Mediävistik. München 4th ed., 58-116.

[34] These references are not intended to be a complete scientific bibliography from the point of view of literary studies, but only a small choice for scholars not familiar with medieval studies.

## 5.6 Modern poetry

*Kazantzakis, Nikos* (1954): The Greek passion / Christ recrucified. New York [Greek original: 'O Khristòs xanastaurónetai. Athens 1948].

*Sandburg, Carl* (1950): Complete poems. New York.

*Saxe, John Godfrey* (1882): The poetical works – Household edition. Boston.

*Saxe, John Godfrey; Galdone, Paul* [pictures] (1963): The blind men and the elephant. New York.

*Tolstoy, Leo Nicolayevich [= Tolstoj, Lev Nikolaevič]* (1963): Sobranie sočinenij [= Collected works]; vol. X: Povesti i rasskazy [= Novels and stories] 1872-1886. Moscow.

*Young, Ed* (1992): Seven blind mice. New York [= London 1994].

## 5.7 Modern languages

*Berger, Arthur Asa* (1995): Blind men and elephants: perspectives on humor. New Brunswick.

*Griffin, Russell M.* (1982): The blind men and the elephant. New York.

*Lindfors, Bernth* (1975): The blind men and the elephant. African Literature Today 7, 53-64.

*Marshal, George J.*: Hegel and the elephant. http://www.bu.edu/wcp/Papers/Inte/InteMars.htm.

*Mudrick, Marvin* (1977): The blind men and the elephant. Hudson Review 19, 426-436.

*Spengemann, William C.* (1982): Three blind men and the elephant: The Problem of Nineteenth-Century English. New Literary History 14, 155-173.

## 5.8 Computer science and information systems literature

*Feistner, Edith; Holl, Alfred* (2004): Multi-perspectivity in information systems modeling and 'The blind men and the elephant'. Information Systems Research in Scandinavia [IRIS27] Conference, Falkenberg, Sweden, publication on CD-ROM [23 p.].

*Frank, Ulrich* (1994): Multiperspektivische Unternehmensmodellierung. München.

*Holl, Alfred; Auerochs, Robert* (2004): Analogisches Denken als Erkenntnisstrategie zur Modellbildung in der Wirtschaftsinformatik [Analogical thinking as a cognitive strategy for model design in information systems]. In: Frank, Ulrich et al. (ed.): Wissenschaftstheorie in Ökonomie und Wirtschaftsinformatik. Theoriebildung und –bewertung, Ontologien, Wissensmanagement (WOWI 2003). Wiesbaden 367-389. Electronic publication at http://wowi2003.uni-koblenz.de/, 335-357.

*Holl, Alfred; Krach, Thomas* (2000): Geschäftsprozessmodellierung und Gestalttheorie [Business process modeling and theory of gestalt]. In: Britzelmaier, Bernd et al. (ed.): Information als Erfolgsfaktor – 2. Liechtensteinisches Wirtschaftsinformatik-Symposium an der FH Liechtenstein. Stuttgart 197-209.

*Holl, Alfred; Scholz, Michael* (1999b): Objektorientierung und Poppers Drei-Welten-Modell als Theoriekerne der Wirtschaftsinformatik [Object orientation and Popper's three worlds as a basis of a theory of information systems]. In: Schütte, Reinhard et al. (ed.): Wirtschaftsinformatik und Wissenschaftstheorie – Grundpositionen und Theoriekerne [conference, University of Essen]. Arbeitsbericht 4 des Instituts für Produktion und industrielles Informationsmanagement. Essen 91-105.

*Holl, Alfred* (1999a): Empirische Wirtschaftsinformatik und evolutionäre Erkenntnistheorie [Information systems as an empirical science and evolutionary epistemology]. In: Becker, Jörg et al. (ed.): Wirtschaftsinformatik und Wissenschaftstheorie –

Bestandsaufnahme und Perspektiven [conference, University of Münster]. Wiesbaden 163-207.

*Rupp, Chris* (2001): Requirements-Engineering und -Management – Professionelle, iterative Anforderungsanalyse für die Praxis. München.

*Steinmüller, Wilhelm* (1993): Informationstechnologie und Gesellschaft: Einführung in die angewandte Informatik. Darmstadt.

*Theodorakis, Manos* (2001): Contextualization: An abstraction mechanism for information modeling. University of Crete, http://www.ics.forth.gr/isl/publications/paperlink/phd_theodorakis.pdf.

*Yourdon, Edward* (1989): Modern structured analysis. Englewood Cliffs NJ.

# 6. Abstract

The exemplary story of ‘The blind men and the elephant’ is used as a pedagogic illustration for mono- and multi-perspectivity. In Chapter 0, two starting points for the discussion of this epistemological phenomenon are introduced: the view of computer science / information systems and the view of literary studies with its description framework. Chapter 1 presents the versions from different cultural contexts in different eras. Chapter 2 discusses and evaluates their epistemological implications and deals with the generalization and application of this exemplary story to epistemological questions in general. Chapter 3 applies it to information systems modeling in particular. The aspects of multiple mono-perspectivity and conflicting partial models in information systems modeling are analyzed and approaches to a well-reasoned and conscious treatment of their integration and harmonization are demonstrated. The main result is that the problem of inconsistencies between different perspectives (partial models) of an enterprise cannot be solved, but the model designers’ awareness is the best method to avoid undesired consequences.

# Authors

**Edith Feistner**
Born 1959; studies of German and Romance languages and literatures in Munich and Paris. Dr. phil. habil. Professor for medieval German literature.
Department of Languages and Literature, University of Regensburg, Germany
Edith.Feistner@sprachlit.uni-regensburg.de

**Alfred Holl**
Born 1956; studies of mathematics and linguistics in Regensburg, development of business information systems. Dr. phil. Professor for information systems.
Department of Computer Science and Information Systems, Georg Simon Ohm University of Applied Sciences of Nuremberg, Germany
Matematiska och systemtekniska institutionen, Växjö Universitet, Sweden
Alfred.Holl@fh-nuernberg.de

## Acta Wexionensia

Below is a listing of books published in the series Acta Wexionensia. Please also see Växjö University Press at www.vxu.se.

Series III (ISSN 1404-4307)

1. *Installation Växjö universitet 1999. Nytt universitet – nya professorer. 1999*. ISBN 91-7636-233-7
2. *Tuija Virtanen & Ibolya Maricic*, 2000: Perspectives on Discourse: Proceedings from the 1999 Discourse Symposia at Växjö University. ISBN 91-7636-237-X
3. *Tommy Book*, 2000: Symbolskiften i det politiska landskapet – namn-heraldik-monument. ISBN 91-7636-234-5
4. *E. Wåghäll Nivre, E. Johansson & B. Westphal* (red.), 2000: Text im Kontext, ISBN 91-7636-241-8
5. *Göran Palm & Betty Rohdin*, 2000: Att välja med Smålandsposten. Journalistik och valrörelser 1982-1998. ISBN 91-7636-249-3
6. *Installation Växjö universitet 2000, De nya professorerna och deras föreläsningar*. 2000. ISBN 91-7636-258-2
7. *Thorbjörn Nilsson*, 2001: Den lokalpolitiska karriären. En socialpsykologisk studie av tjugo kommunalråd (doktorsavhandling). ISBN 91-7636-279-5
8. *Henrik Petersson*, 2001: Infinite dimensional holomorphy in the ring of formal power series. Partial differential operators (doktorsavhandling). ISBN 91-7636-282-5
9. *Mats Hammarstedt*, 2001: Making a living in a new country (doktorsavhandling). ISBN 91-7636-283-3
10. *Elisabeth Wåghäll Nivre & Olle Larsson*, 2001: Aspects of the European Reformation. Papers from Culture and Society in Reformation Europe, Växjö 26-27 November 1999. ISBN 91-7636-286-8
11. *Olof Eriksson*, 2001: Aspekter av litterär översättning. Föredrag från ett svensk-franskt översättningssymposium vid Växjö universitet 11-12 maj 2000. ISBN 91-7636-290-6.
12. *Per-Olof Andersson*, 2001: Den kalejdoskopiska offentligheten. Lokal press, värdemönster och det offentliga samtalets villkor 1880-1910 (Doktorsavhandling). ISBN: 91-7636-303-1.
13. *Daniel Hjorth*, 2001: Rewriting Entrepreneurship. Enterprise discourse and entrepreneurship in the case of re-organising ES (doktorsavhandling). ISBN: 91-7636-304-X.
14. *Installation Växjö universitet 2001, De nya professorerna och deras föreläsningar*, 2001. ISBN 91-7636-305-8.
15. *Martin Stigmar*, 2002. Metakognition och Internet. Om gymnasieelevers informationsanvändning vid arbete med Internet (doktorsavhandling). ISBN 91-7636-312-0.
16. *Sune Håkansson*, 2002. Räntefördelningen och dess påverkan på skogsbruket. ISBN 91-7636-316-3.
17. *Magnus Forslund*, 2002. Det omöjliggjorda entreprenörskapet. Om förnyelsekraft och företagsamhet på golvet (doktorsavhandling). ISBN 91-7636-320-1.

18. *Peter Aronsson och Bengt Johannisson (red)*, 2002. Entreprenörskapets dynamik och lokala förankring. ISBN: 91-7636-323-6.
19. *Olof Eriksson*, 2002. Stil och översättning. ISBN: 91-7636-324-4
20. *Ia Nyström*, 2002. ELEVEN och LÄRANDEMILJÖN. En studie av barns lärande med fokus på läsning och skrivning (doktorsavhandling). ISBN: 91-7636-351-1
21. *Stefan Sellbjer*, 2002. Real konstruktivism – ett försök till syntes av två dominerande perspektiv på undervisning och lärande (doktorsavhandling). ISBN: 91-7636-352-X
22. *Harald Säll*, 2002. Spiral Grain in Norway Spruce (doktorsavhandling). ISBN: 91-7636-356-2
23. *Jean-Georges Plathner*, 2003. La variabilité du pronom de la troisième personne en complément prépositionnel pour exprimer le réfléchi (doktorsavhandling). ISBN: 91-7636-361-9
24. *Torbjörn Bredenlöw*, 2003. Gestaltning – Förändring – Effektivisering. En teori om företagande och modellering. ISBN: 91-7636-364-3
25. *Erik Wångmar,* 2003. Från sockenkommun till storkommun. En analys av storkommunreformens genomförande 1939-1952 i en nationell och lokal kontext (doktorsavhandling). ISBN: 91-7636-370-8
26. *Jan Ekberg (red),* 2003, Invandring till Sverige – orsaker och effekter. Årsbok från forskningsprofilen AMER. ISBN: 91-7636-375-9
27. *Eva Larsson Ringqvist* (utg.), 2003, Ordföljd och informationsstruktur i franska och svenska. ISBN: 91-7636-379-1
28. *Gill Croona*, 2003, ETIK och UTMANING. Om lärande av bemötande i professionsutbildning (doktorsavhandling). ISBN: 91-7636-380-5
29. *Mikael Askander*, 2003, Modernitet och intermedialitet i Erik Asklunds tidiga romankonst (doktorsavhandling). ISBN: 91-7636-381-3
30. *Christer Persson*, 2003, Hemslöjd och folkökning. En studie av befolkningsutveckling, proto-industri och andra näringar ur ett regionalt perspektiv. ISBN: 91-7636-390-2
31. *Hans Dahlqvist*, 2003, Fri att konkurrera, skyldig att producera. En ideologikritisk granskning av SAF 1902-1948 (doktorsavhandling). ISBN: 91-7636-393-7
32. *Gunilla Carlsson*, 2003, Det våldsamma mötets fenomenologi – om hot och våld i psykiatrisk vård (doktorsavhandling). ISBN: 91-7636-400-3
33. *Imad Alsyouf*, 2004. Cost Effective Maintenance for Competitive Advantages (doktorsavhandling). ISBN: 91-7636-401-1.
34. *Lars Hansson*, 2004. Slakt i takt. Klassformering vid de bondekooperativa slakteriindustrierna i Skåne 1908-1946 (doktorsavhandling). ISBN: 91-7636-402-X.
35. *Olof Eriksson*, 2004. Strindberg och det franska språket. ISBN: 91-7636-403-8.
36. *Staffan Stranne*, 2004. Produktion och arbete i den tredje industriella revolutionen. Tarkett i Ronneby 1970-2000 (doktorsavhandling). ISBN: 91-7636-404-6.
37. *Reet Sjögren*, 2004. Att vårda på uppdrag kräver visdom. En studie om vårdandet av män som sexuellt förgripit sig på barn (doktorsavhandling). ISBN: 91-7636-405-4.
38. *Maria Estling Vannestål*, 2004. Syntactic variation in English quantified noun phrases with *all*, *whole*, *both* and *half* (doktorsavhandling). ISBN: 91-7636-406-2.

39. *Kenneth Strömberg*, 2004. Vi och dom i rörelsen. Skötsamhet som strategi och identitet bland föreningsaktivisterna i Hovmantorp kommun 1884-1930 (doktorsavhandling). ISBN: 91-7686-407-0.
40. *Sune G. Dufwa*, 2004. Kön, lön och karriär. Sjuksköterskeyrkets omvandling under 1900-talet (doktorsavhandling). ISBN: 91-7636-408-9
41. *Thomas Biro*, 2004. Electromagnetic Wave Modelling on Waveguide Bends, Power Lines and Space Plasmas (doktorsavhandling). ISBN: 91-7636-410-0
42. *Magnus Nilsson*, 2004, Mångtydigheternas klarhet. Om ironier hos Torgny Lindgren från *Skolbagateller* till *Hummelhonung* (doktorsavhandling). ISBN:91-7636-413-5
43. *Tom Bryder*, 2004. Essays on the Policy Sciences and the Psychology of Politics and Propaganda. ISBN: 91-7636-414-3
44. *Lars-Göran Aidemark*, 2004. Sjukvård i bolagsform. En studie av Helsingborgs Lasarett AB och Ängelholms Sjukhus AB. ISBN: 91-7636-417-8
45. *Per-Anders Svensson*, 2004. Dynamical Systems in Local Fields of Characteristic Zero (doktorsavhandling). ISBN: 91-7636-418-6
46. *Rolf G Larsson*, 2004. Prototyping inom ABC och BSc. Erfarenheter från aktionsforskning i tre organisationer (doktorsavhandling). ISBN: 91-7636-420-8
47. *Päivi Turunen*, 2004. Samhällsarbete i Norden. Diskurser och praktiker i omvandling (doktorsavhandling). ISBN: 91-7636-422-4
48. *Carina Henriksson*, 2004. Living Away from Blessings. School Failure as Lived Experience (doktorsavhandling). ISBN: 91-7636-425-9
49. *Anne Haglund*, 2004. The EU Presidency and the Northern Dimension Initiative: Applying International Regime Theory (doktorsavhandling). ISBN: 91-7636-428-3
50. *Ulla Rosén*, 2004. Gamla plikter och nya krav. En studie om egendom, kvinnosyn och äldreomsorg i det svenska agrarsamhället 1815-1939. ISBN: 91-7636-429-1
51. *Michael Strand*, 2004. Particle Formation and Emission in Moving Grate Boilers Operating on Woody Biofuels (doktorsavhandling). ISBN: 91-7636-430-5
52. *Bengt-Åke Gustafsson*, 2004. Närmiljö som lärmiljö – betraktelser från Gnosjöregionen. ISBN: 91-7636-432-1
53. *Lena Fritzén* (red), 2004. På väg mot integrativ didaktik. ISBN: 91-7636-433-X
54. *M.D. Lyberg, T. Lundström & V. Lindberg*, 2004. Physics Education. A short history. Contemporary interdisciplinary research. Some projects. ISBN: 91-7636-435-6
55. *Gunnar Olofsson (red.),* 2004. Invandring och integration. Sju uppsatser från forskningsmiljön ”Arbetsmarknad, Migration och Etniska relationer” (AMER) vid Växjö universitet. ISBN: 91-7636-437-2
56. *Malin Thor*, 2005. Hechaluz – en rörelse i tid och rum. Tysk-judiska ungdomars exil i Sverige 1933-1943 (doktorsavhandling). ISBN: 91-7636-438-0
57. *Ibolya Maricic*, 2005. Face in cyberspace: Facework, (im)politeness and conflict in English discussion groups (doktorsavhandling). ISBN: 91-7636-444-5
58. *Eva Larsson Ringqvist* och *Ingela Valfridsson* (red.), 2005. Forskning om undervisning i främmande språk. Rapport från workshop i Växjö 10-11 juni 2004. ISBN: 91-7636-450-X
59. *Vanja Lindberg*, 2005. Electronic Structure and Reactivity of Adsorbed Metallic Quantum Dots (doktorsavhandling). ISBN: 91-7636-451-8
60. *Lena Agevall*, 2005. Välfärdens organisering och demokratin – en analys av New Public Management. ISBN: 91-7636-454-2

61. *Daniel Sundberg*, 2005. Skolreformernas dilemman – En läroplansteoretisk studie av kampen om tid i den svenska obligatoriska skolan (doktorsavhandling). ISBN: 91-7636-456-9.
62. *Marcus Nilsson*, 2005. Monomial Dynamical Systems in the Field of *p*-adic Numbers and Their Finite Extensions (doktorsavhandling). ISBN: 91-7636-458-5.
63. *Ann Erlandsson*, 2005. Det följdriktiga flockbeteendet: en studie om profilering på arbetsmarknaden (doktorsavhandling). ISBN: 91-7636-459-3.
64. *Birgitta Sundström Wireklint*, 2005. Förberedd på att vara oförberedd. En fenomenologisk studie av vårdande bedömning och dess lärande i ambulanssjukvård (doktorsavhandling). ISBN: 91-7636-460-7
65. *Maria Nilsson*, 2005. Differences and similarities in work absence behavior – empirical evidence from micro data (doktorsavhandling). ISBN: 91-7636-462-3
66. *Mikael Bergström och Åsa Blom*, 2005. Above ground durability of Swedish softwood (doktorsavhandling). ISBN: 91-7636-463-1
67. *Denis Frank*, 2005. Staten, företagen och arbetskraftsinvandringen - en studie av invandringspolitiken i Sverige och rekryteringen av utländska arbetare 1960-1972 (doktorsavhandling). ISBN: 91-7636-464-X
68. *Mårten Bjellerup,* 2005. Essays on consumption: Aggregation, Asymmetry and Asset Distributions (doktorsavhandling). ISBN: 91-7636-465-8.
69. *Ragnar Jonsson*, 2005. Studies on the competitiveness of wood – market segmentation and customer needs assessment (doktorsavhandling). ISBN: 91-7636-468-2.
70. *Ali M. Ahmed*, 2005. Essays on the Behavioral Economics of Discrimination (doktorsavhandling). ISBN: 91-7636-472-0.
71. *Katarina Friberg*, 2005. The workings of co-operation.. A comparative study of consumer co-operative organisation in Britain and Sweden, 1860 to 1970 (doktorsavhandling). ISBN: 91-7636-470-4.
72. *Jonas Sjölander*, 2005. Solidaritetens omvägar. Facklig internationalism i den tredje industriella revolutionen – (LM) Ericsson, svenska Metall och Ericssonarbetarna i Colombia 1973-1993 (doktorsavhandling) ISBN: 91-7636-474-7.
73. *Daniel Silander*, 2005. Democracy from the outside-in? The conceptualization and significance of democracy promotion (doktorsavhandling). ISBN: 91-7636-475-5.
74. *Serge de Gosson de Varennes*, 2005. Multi-oriented Symplectic Geometry and the Extension of Path Intersection Indices (doktorsavhandling). ISBN: 91-7636-477-1.
75. *Rebecka Ulfgard*, 2005. Norm Consolidation in the European Union: The EU14-Austria Crisis in 2000 (doktorsavhandling). ISBN: 91-7636-482-8
76. *Martin Nilsson*, 2005. Demokratisering i Latinamerika under 1900-talet – vänstern och demokratins fördjupning (doktorsavhandling). ISBN: 91-7636-483-6
77. *Thomas Panas*, 2005. A Framework for Reverse Engineering (doktorsavhandling). ISBN: 91-7636-485-2
78. *Susanne Linnér*, 2005. Värden och villkor – pedagogers samtal om ett yrkesetiskt dokument (doktorsavhandling). ISBN: 91-7636-484-4.
79. *Lars Olsson* (red), 2005. Invandring, invandrare och etniska relationer I Sverige 1945-2005. Årsbok från forskningsmiljön AMER vid Växjö universitet. ISBN: 91-7636-488-7.

80. *Johan Svanberg*, 2005. Minnen av migrationen. Arbetskraftsinvandring från Jugoslavien till Svenska Fläktfabriken i Växjö kring 1970. ISBN: 91-7636-490-9.
81. *Christian Ackrén*, 2006. On a problem related to waves on a circular cylinder with a surface impedance. ISBN: 91-7636-492-5.
82. *Stefan Lund*, 2006. Marknad och medborgare – elevers valhandlingar i gymnasieutbildningens integrations- och differentieringsprocesser. ISBN: 91-7636-493-3.
83. *Ulf Petäjä*, 2006. Varför yttrandefrihet? Om rättfärdigandet av yttrandefrihet med utgångspunkt från fem centrala argument i den demokratiska idétraditionen. ISBN: 91-7636-494-1.
84. *Lena Carlsson*, 2006. Medborgarskap som demokratins praktiska uttryck i skolan – diskursiva konstruktioner av gymnasieskolans elever som medborgare. ISBN: 91-7636-495-X
85. *Åsa Gustafsson*, 2006. Customers´ logistics service requirements and logistics strategies in the Swedish sawmill industry. ISBN: 91-7636-498-4.
86. *Kristina Jansson*, 2006. Saisir l'insaisissable. Les formes et les traductions du discours indirect libre dans des romans suédois et français. ISBN: 91-7636-499-2
87. *Edith Feistner, Alfred Holl*, Mono-perspective views of multi-perspectivity : Information systems modeling and 'The bild men and the elephant'. ISBN : 91-7636-500-X.

**Växjö University Press**
351 95 Växjö
www.vxu.se