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Special terms in children's non-fiction books: Choice and presentation

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Abstract. This contribution deals with the way terminology is introduced in non-fiction books for children. The focus is on the choice of terms introduced, their difficulty, their emotional impact and the way in which they are displayed in the text.

Keywords. Terminology, non-fiction books for children in German, terminology and illustrations, terminology and emotion.

"You will learn more new vocabulary here than you will in your language classes." (My biology teacher at the start of grade 11)

1. Introduction

Non-fiction books for children are an important segment of the book market. Some are read purely for enjoyment, some look as if they were rather meant to make parents happy. Be that as it may, the huge number of books published by almost every publishing house for children's books testifies to the fact that there is a demand for these books.

The non-fiction book for children has diversified considerably over the years. But at a basic level of diversification, we find those which follow a narrative alongside encylopedias and pictureoriented publications. This means that the following dictum holds true (and not just in a German context): "Im Prinzip baut die bunte Vielfalt der Sachbücher für Kinder und Jugendliche auf den Grundformen des Johann Amos Comenius und Joachim Heinrich Campe auf…" [Basically, today's variety of non-fiction books for children and teens is based on the pioneering works of Johann Amos Comenius and Joachim Heinrich Campe.] (Ossowski 2005: 672) And indeed, those two pioneers offer almost every way of dealing with terminology we find in children's non-fiction books today: Campe makes terminology part of his narrative, Comenius uses pictures and short phrases.

Terminology does necessarily play a role in non-fiction books, even if they are addressed at young schoolchildren. It is simply part of the knowledge transferred. We all know that scientific discourse would be cumbersome without terminology.

At the same time, terminology can be difficult and complicated. Many terms, particularly from the sciences, are of Greco-Latin origin and may be longish, difficult to decipher and to memorise and even more difficult to pronounce. Therefore, some authors of non-fiction for children try to avoid terminology and explain things in simple everyday language. This is easiest where pictures are used for explanation, as the text can point to objects in the picture without actually naming them.

This approach undoubtedly has its merits. It is most useful where the authors try to interest children in a topic they may approach tentatively. If, however, the subject in question is one children are interested in anyway, terminology should not be avoided. Knowing terminology means that you are a specialist, an insider. One only has to watch children's enjoyment of dinosaur names to testify to that.

Learning terminology means learning how a certain scientific subject ticks: Terminology helps to bring order into knowledge. It is an important part of ontologies and of knowledge management. One only has to think of Linné's system of animal and plant names which has shaped the way we look at our natural surroundings for centuries. For all these reasons, terminology is important:

Wo von Technik die Rede ist, muss Fachbegrifflichkeit ihren Platz haben. Sie ausmerzen zu wollen, ist Nonsens. Zumal da, wo Laien technologisches Wissen vermittelt werden soll, wäre solcher Purismus kontraproduktiv. Es gibt keinen Grund, ihnen damit die Chance zu nehmen, wichtige Fachbegriffe zu lernen. [When we talk about technical topics, terminology cannot be avoided. It is nonsense to try to eradicate it. Especially if expert knowledge is brought to non-experts, this kind of purism must be seen as counter-productive. There is no reason to deprive them of the chance to learn important technical terms.] (Bechtel & Thomas 2011: 189)

Schlenkhoff (2012) emphasises the fact that the terminology used has to be explained:

Fachbegriffe müssen erklärt werden. Redakteure dürfen nicht davon ausgehen, dass alle Anwender mit allen Fachbegriffen vertraut sind. Wenn Fachbegriffe für das Verständnis des Produkts und der Handlungen benötigt werden, kann es sogar sinnvoll sein, diese im beschreibenden Teil der Dokumentation in eigenen Abschnitten ausführlich zu erklären. [Special terms have to be explained. Editors must not assume that all users are familiar with all the technical terms used. If technical terms are necessary for understanding and handling a product, it can make sense to reserve parts of the technical documentation solely for their definition.] (Schlenkhoff 2012: 126)

Although this statement comes from a handbook on Technical Writing, it can be transferred to non-fiction books for any kind of target group.

Terminology is of course not without its problems. Particularly in children's non-fiction, the terminology used should not be experimental but well-established. Authors and translators should diligently research what terms are available for certain concepts and which of these are generally preferred by the expert community in question. The work of the terminologist is hardly ever appreciated in these quarters, but it is extremely important:

Gleichzeitig mit der Zunahme menschlichen Wissens in allen Bereichen ist auch der Umfang der Fachwortbestände ständig gewachsen; es kommt immer häufiger zu Verständigungsschwierigkeiten zwischen Laien, aber auch zwischen Experten aus verschiedenen, manchmal sogar aus gleichen Fachgebieten. Es ist daher wichtig, neue Fachwörter möglichst bald nach ihrer Entstehung zu erfassen, ihre exakte Bedeutung zu klären bzw. festzulegen und sie den Interessenten zugänglich zu machen. [As the amount of human knowledge has increased, so has the amount of terminology. Communication problems between non-experts, but also between experts from certain areas increase. Therefore, it is important to document terminology, define terms and make these data available to those interested.] (Arntz et al.: 2004:1)

The books covered in this paper are in German and deal with topics from the natural sciences. Terminology problems in the humanities are different: all too often, words look deceptively simple (they do not have Greco-Latin origins), but the concepts behind them are extremely difficult to explain. This would need a different research approach. Most of the books chosen here deal with either space or insects. Space belongs to the so-called A-topics, i.e. topics which children are interested in without any parental nagging, which sell well and where we consequently find a wealth of books published (other well-established A-topics are dinosaurs or medieval knights). Insects are not normally listed as an A-topic, but books about insects have become increasingly more popular over the past years.

Although these topics seem to be quite universal, the design and structuring of children's nonfiction books is culture-specific. Japanese non-fiction books for children generally use a fair amount of special language and terminology and tend to present scientific facts at a higher level than their European counterparts do. There is, however, cultural exchange due to the fact that many non-fiction books for children are translations. Most of the books picked for analysis in this paper are of either British or German origin.

1.1. Terminology and emotion

At first sight, terminology is cold and sober. It is meant to be precise and functional. This sounds like the very opposite of emotion. But this is not true. If it were the case, scientists would not enjoy coining funny terms such as the strange names based on real people some newly discovered species are graced with (http://de.wikipedia.org/wiki/Skurrile wissenschaftliche Namen). Also, science fiction is sometimes used as a basis for terms, particularly in physics. Some terms are pure fantasy terms, for example "googol" which was allegedly invented by the nine-year-old nephew of the mathematician Edward Kasner (http://de.wikipedia.org/wiki/Googol).

Scientific terms stimulate the imagination of experts and non-experts alike. The very sound of scientific terms, their strangeness, their exclusiveness, are in fact attractive. If this were not the case, science-fiction authors would probably put far less effort into the invention of new terms. But terminology systems and the corresponding ontologies build worlds. It is partly through terminology that we enter these worlds. Terminology is fascinating.

However, terminology can also be intimidating. If there are too many new long and difficult words in a text, the text will not look very tempting to the prospective readers. First books on dinosaurs (kindergarten age) will very probably contain names such as Tyrannosaurus, Apatosaurus or Hadrosaurus, which are not too difficult to read. Procompsognathus and the flying reptile Pterodactyl will probably appear in books addressed at readers from age 8 on. Tenvear-old dinosaur experts will not flinch at the sight of longer and more complex names.

Terminology is of course not only the Linné names. Complicated though they are, they can be explained easily by giving the name of plant or beast in question in the reader's mother tongue. Dinosaurs are admittedly a bad example here. Other pieces of terminology need "real" explanations - in words or in pictures. But their emotional side remains.

1.2. Choosing terminology

Terminology avoidance is an important topic in children's non-fiction. The fear that terminology might look difficult rather than fascinating is not unfounded. Children who pick the books themselves because they are interested in the topic will not mind terminology. Children who are "forced" to read the books in question, either by teachers or by well-meaning parents, may be put off by terminology.

As is generally the case with children's books, non-fiction books for children are marketed by age group. Whereas grown-ups tend to take information on the intended age group as advice and buy accordingly, children tend to ignore the age group information given on the cover and pick books by topic (and if they are interested in the respective topic, they will normally have no problems reading books intended for older children). Age group may be a fairly precise indicator for what amount and what kind of terminology the reader might expect.

Publishers often use guidelines or lists which guide the authors towards the use of terminology preferred by the publishing house in question (oral communication; source does not want to be named). Due to these preferences, there are books where terminology is more or less avoided, no matter what the topic is. This can result in fairly imprecise information and will therefore only be done in books for the very young. In some books, the choice of terms looks unreflected. Very complex terms stand alongside childish or simplistic terms used as synonyms (see 5. Terminology Overkill and Avoidance). The one above-mentioned exception where we never find terminology avoidance, dinosaurs, is due to the fact that the poor beasts do not have common names (except for T-rex).

Having said that, it still remains rather difficult to choose which terms should appear in the books and which terms are better left out.

2. Terminological quality

The quality of terminology in children's non-fiction books is hardly ever subject to debate and does not appear in reviews in mainstream journalism. This is surprising. The revelations in Ahland's dissertation (1998) on the quality of terminology in children's books about the rainforest are quite shocking. Some of the shortcomings listed there are due to the fact that many books are translated into German, without the necessary prerequisites such as setting up a terminology database. At the same time, translators have to work under extreme time pressure. In each publishing house, editors have to supervise the production of books about a huge variety of topics and can necessarily not be experts in every single field.

The shortcomings of terminological quality are also a matter of debate at the meetings of the juries for the Deutscher Jugendliteraturpreis (German Children's Literature Award). Many nonfiction books which look good at first sight do not make it onto the shortlist due to terminology mistakes (Jüngst 2009). This problem is not discussed further in this paper but needs more research and more public awareness.

3. Presentation of terms

Terms can be presented in different spaces in books. Some of these spaces are conventionalised, for example glossaries or information boxes. There is hardly any literature on that which deals specifically with non-fiction for children, but there are books on Technical Writing and journalism which mention terminology and the problems associated. Bechtel and Thomas has a chapter on language for special purposes which deals with the problems specific terminology presents to the journalist (Bechtel & Thomas 2011: 186-188; some rules 190-191). Von Campenhausen, also from the field of journalism, deals with specific terminology and jargon in a few paragraphs (Campenhausen 2011: 85-86). Both concentrate mainly on matters of popularisation and terminology avoidance. Bechtel and Thomas mention rooms for the presentation of terminology in a short aside:

Fachwörter dürfen nicht inflationär über den Leser hereinbrechen. Und sie sollten niemals ohne ausreichende Erklärung vorkommen. Wo sie [Fachwörter] den Lesefluss stören, lassen sie sich immer noch aus dem Text auslagern: Kästen mit Worterklärungen, ein Glossar, im Internet der Link zu einem eigenen Erläuterungstext – Möglichkeiten gibt es viele. [An avalanche of terms burying the reader should be avoided. Moreover, terms should never appear without an explanation. Where terms make fluent reading impossible, they can be presented in separate spaces: boxes, a glossary, Internet links – the possibilities are endless!] (Bechtel & Thomas 2011: 189-190)

Presentation, terminology avoidance and terminology overkill are thus closely related.

3.1. In the text

One of the most common spaces for defining terms is the text itself. Be it more informative or more narrative, we find definitions of terms which are normally one to three sentences long. These sentences are well-formed and they are not normally highlighted or printed in a different font to make them stick out.

If terms are defined within the text, the author's assumption is that the reader reads the whole book from front to back. The definition appears when the term first appears and is not normally repeated elsewhere in the book. In books dealing with the sciences, narrative structures appear most often in scientist's biographies. This genre is therefore most likely to define terms somewhere in the text.

A book from a different genre, which uses this strategy, is *Mistviecher [Dirty Beasts]* (Bonotaux 2008), a book about insects with many fun elements. Terms are highlighted in red in the text.

This is true of the names of the insects in German (the Greco-Latin names are shown in brackets) as well as of terms such as "fotophob" [photophobic] (11), "Waben" [honeycombs] (16), "Geschmacksknospen" [taste buds] (22), "Ektoparasitismus" [ectoparasites] (28). "Waben" is used frequently in everyday German, and the meaning of "Geschmacksknospen" can easily be guessed from the two parts the word is made up of. "Fotophob" and "Ektoparasitismus" have to be explained. Unfortunately, words which refer to the topic the next paragraph deals with are also highlighted in red in this book, even if they are everyday words and are presented without explanation. This is not a good strategy and may easily lead to confusion.

Lift off! (Bührke 2008), a book on space travel for children aged 12+, has no glossary and no list of keywords. There are information boxes, but they contain biographies and information about space travel projects (there is one exception on page 23). The book relies completely on an admittedly well-written text in a clear journalistic style. There is no chance to look up a term if it appears a second time and if the reader has forgotten its meaning. On the other hand, the fewer typographic interruptions there are, the easier and the more pleasant the reading. The reader can lose himself in the narration without being reminded that he is reading a book again and again.

Unser Mond [Our Moon] (Jung & Jang 2010) which is meant for young children, was originally published in Korea. Surprisingly, it has hardly any terminological content – this is not typical of children's non-fiction books published in East Asia. The little terminological content we find is part of the narration.

3.2. Boxes

Boxes can appear in books which follow a narrative strategy, but they are more common in books which have a double-page spread structure. The latter was invented by Dorling Kindersley and has become very popular with a variety of publishers all over Europe.

Boxes have several advantages: They stand out on the page and thus give a clear signal that their content might be important. On the other hand, readers can check the first few words and then decide to read or not to read the whole box. The content of these boxes may be repeated on various pages in books which use a double-page spread layout, as these books are not designed to be read page by page and as readers may have missed out on some important information from an earlier box. The size of the box forces the author to write short and snappy definitions of terms. Unsurprisingly, boxes originally stem from journalistic formats such as print magazines.

In *Wissen mit Links: Insekten [e.explore insects]* (Burnie 2008), we find boxes on nearly every double-page spread. They contain extra information, including extra terminology. The book is an example of children's non-fiction which far extends the average grown-up's knowledge of the topic. The boxes contain terms such as "Stylopiden" (43), "unvollständige Metamorphose" [hemimetabolous development] (65), "Winterstarre" [dormant state] (73). There are extra boxes which refer to orders within the insect world. The amount of terminology is enough to make the reader a budding entomologist. There is no glossary in this book, but a good list of keywords.

Another book with information boxes, partly with a terminological content, partly with other content, is *Mein interaktiver Weltraumatlas [Interactive Atlas of Space]* (Scagell 2009). There are boxes about Pluto's excentric orbit (28) or about different kinds of comets (31).

Boxes can be seen as attractive, as Maja Nielsen, a well-known German author of non-fiction for children, states:

Jungs, die sonst nicht lesen, werden durch meine Bücher zum Lesen gebracht. Selbst wenn sie sich am Anfang noch nicht an den Text machen, werden sie durch interessante Bildunterschriften und Sachinfokästen regelrecht zum Lesen verführt. [Boys who are not normally voracious readers are made curious by the way my books are designed. They may not read the whole text right from the beginning, but interesting captions and fact boxes tempt them into reading.] (Nielsen 2010: 121)

3.3. Glossaries

In order to use glossaries, children need to be quite competent and experienced readers. They have to know what glossaries are and where to find them. Consequently, glossaries tend to appear in books for readers age 10+ only. From this age group on, books with glossaries are the rule rather than the exception.

Glossaries in non-fiction books for children are not different from those for grown-ups. They are in alphabetical order, normally arranged in two columns, and the words defined in the glossaries are highlighted in the text. The glossaries do not include pictures or other kinds of definition helps.

3.4. Labelled illustrations

Labelled drawings or photographs are a good means of information in the natural sciences. They can show the parts complex things are made up of, or they can show things in relation to each other. At the same time, the labels give the terms needed. Extensive information about visualisation and the use of words and pictures in scientific texts can be found in Ballstaedt (2012).

Mein erstes Buch vom Mond [My First Book about the Moon] (Wernsing 2009) uses this strategy often. However, the way the terms are presented demonstrates quite clearly that pictures alone are not necessarily enough explanation. The picture of a spacesuit (29) is extensively labelled: we do not only find terminology, but short, explanatory sentences. The mix of the terminology used is strange: "Helm mit goldbedampftem Visier" [helmet with a gold-covered visor – the German term actually refers to the way the gold is brought onto the visor] is difficult to understand if you do not have any background knowledge in the material sciences. On the other hand, the childish "Pipi-Beutel" ("wee-wee bag") is used instead of a more grown-up term.

In the insect books, we find drawings or photographs of insects with the body parts labelled. This is standard. The difference lies in the choice of terms for these body parts: German or Greco-Latin (see below).

Labelled illustrations often contain terminology which is not needed in order to read the rest of the book. They can be studied when the child reads the text a second time – or else they can be the object which draws the eye at a first glance.

4. Emotionalised definitions

The emotional impact of terminology as such has been mentioned above. Definitions can be phrased in a way which adds extra emotion. There are keywords such as "amazing", which are used frequently to signal emotion, a practice we know from TV documentaries.

(1) Das Verspeisen von Insekten hat sogar einen Namen: Entomophagie. [There is even a special term for eating insects: entomophagy.] (*Bsss.* Bingham et al. 2008: 34)

The term "sogar" marks the term in question as something surprising and worth remembering.

Sometimes, pictures are used in order to emotionalise terminology. In *Mein erstes Buch vom Mond [My First Book about the Moon]*, little mice dancing around a ball-shaped piece of cheese demonstrate how the lunar phases work (Wernsing 2009: 11).

Emotion in non-fiction books for children frequently stems from anthromorphism. The insects talk, they behave like humans, e.g. eat their meals seated at a table or complain about the fact that humans do not like them although they are so wonderful (examples both in Bingham et al. 2008 and Bonotaux 2008). Although it is not the terms themselves which are emotionalised here, it reflects back on the way terminology is presented.

5. Terminology avoidance and terminology overkill

The quotation from Bechtel and Thomas mentioned in the beginning deals with matters of terminology avoidance. Their demand that terminology should not be avoided as it is part of learning but that terminology has to be explained wherever it appears holds particularly true for children's non-fiction. The practice, however, looks different.

Interestingly, terminology avoidance and terminology overkill can appear in the same book, even on the same page. The following is from *Lupenbuch: Insekten [Viewfinder Insects]* (Woodward 2010). Page 4 shows the body parts of a grasshopper, labelled with the common German names, without any Greco-Latin terms. Page 5, however, has an information box about spiders and scorpions and gives the description of the spider's body parts in the following way:

(2) Ihr Körper hat nur zwei Teile: Prosoma (Vorderleib) und Opisthosoma (Hinterleib). [Its body has two parts: prosoma (head and thorax fused together) and opisthosoma (abdomen).]

This is in marked contrast to the rest of the book where such complex terms are avoided.

The same is true of *Mistviecher* (Bonotaux 2008). On the one hand, the language used is easy to read and offers little complexity. On the other hand, where terminology is used it is highly complex and surpasses the knowledge of an educated grown-up who does not specialise in insects.

Terminological overkill is also manifest where terms are used without any explanations. This is true of *Mein erstes Buch vom Mond* (Wernsing 2009). The following quotation is a typical example:

- (3) Bekannt sind die drei "Strahlenkrater" Kopernikus, Kepler und Tycho … Der größte Krater liegt auf der Mondrückseite. Mit einem Durchmesser von 2250 km und einer Tiefe von 12 km ist er der größte bekannte Einschlagkrater unseres Sonnensystems! [The three craters with ray systems, Copernicus, Kepler and Tycho are particularly well-known … The largest crater can be found on the dark side of the moon. With a diameter of 2250 km and a depth of 12 km it is the biggest know impact crater in our solar system!] (Wernsing 2009: 9)
- (4) The terms "ray systems" and "impact crater" are not defined anywhere in the text. The accompanying picture shows a meteorite hitting the surface of the moon.

6. Conclusion

This paper could only provide a short overview over some aspects of a fascinating phenomenon. The way terminology is presented in non-fiction books for children, the spaces used and the terms chosen or avoided partly shape the way children perceive a new topic. The impact of terminology itself oscillates between informative and emotive. Terminology can be fascinating as well as frightening. Whatever the case, the importance of terminology in non-fiction books for children cannot be underestimated.

A close look at a number of books reveals that there are numerous inconsistencies in the way terminology is chosen and presented. The question of terminological correctness was not dealt with in this paper, but previous publications testify to the fact that some books contain serious terminological flaws.

There will without doubt be new developments in the field of non-fiction for children, and they will also affect the way authors and publishers deal with the choice and presentation of terminology.

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