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30th annual Conference

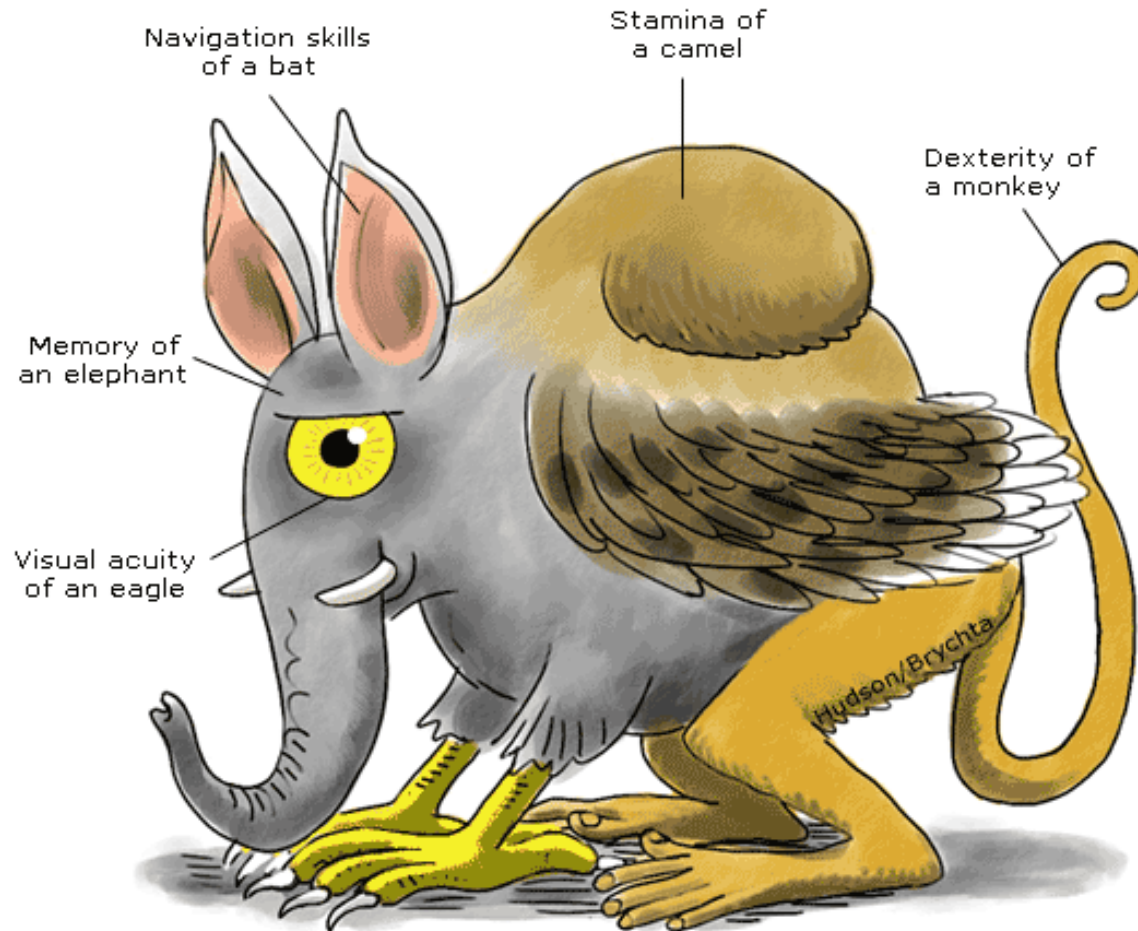
June 1 - 4, 2009
Leuven, Belgium

Just for You,
Quality through Innovation
Campusbibliotheek Arenberg

E-accessibility for reading impaired students

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Some of our clients are perfect...



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"The Perfect User"

Alternative reading methods

www.nrc.nl/epaper

NRC Handelsblad verschijnt voortaan waar u verschijnt



NRC  HANDELSBLAD
ePAPER

nu verkrijgbaar bij uw
selexyz boekhandel



ePaper



Amazon Kindle

Listen to a best seller
on your iPod or MP3 player!



audiobook



De AuDioKrant



De DiGikrant



De Braillekrant

Specialised
formats for
people with a
reading
impairment



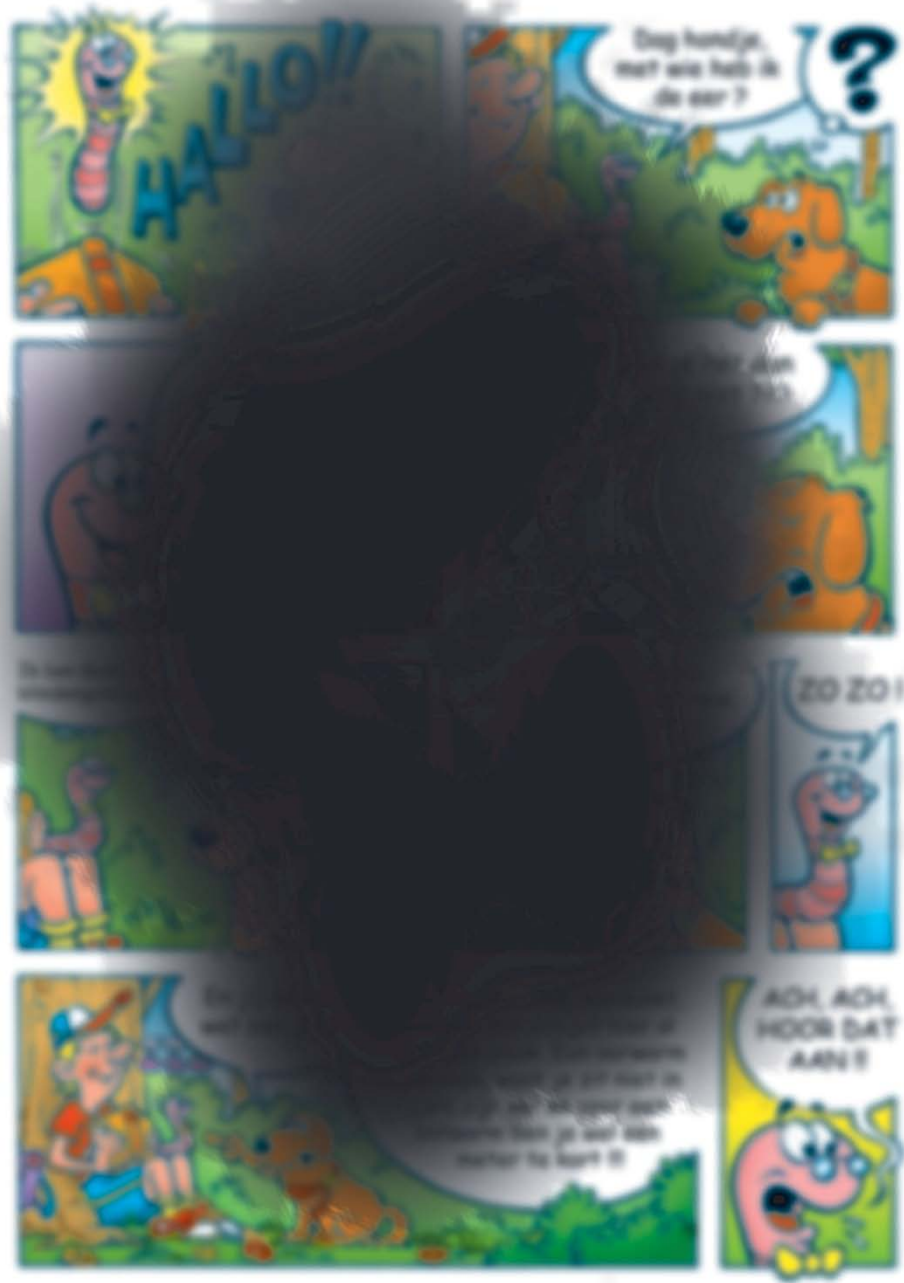
Overview of this presentation

- **Overview of of visual impairments**
- Reading solutions
 - Text based reading
 - Audio based reading:
 - Audiobooks (commercial)
 - Specialised production centres
 - Daisy format: hard- and software
 - Kurzweil/Sprint reading software
- Additional aspects
 - DRM/Copyright
 - Cataloguing issues

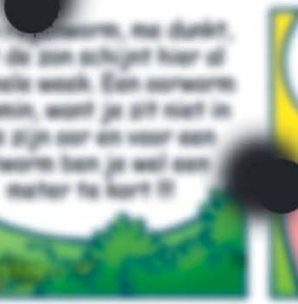
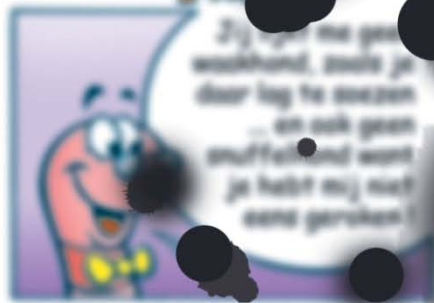
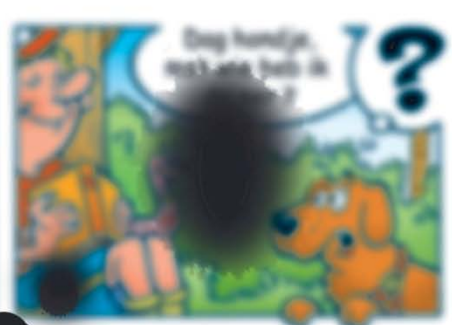


complete blindness





Macula degeneration



Jij lijkt misschien
waakhond, zoals je
daar lag te soezen
... en ook geen
snuffelhond want
je hebt mij niet
eens geroken !



Ik breng
Lars overal
veilig naartoe !



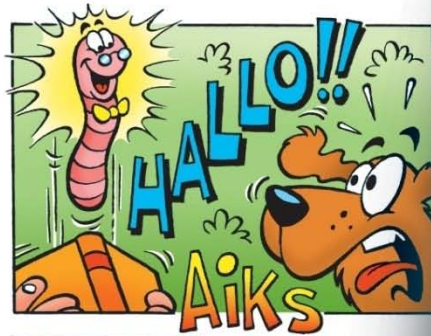
Ik kijk in zijn plaats
met mijn ogen en mijn neus.
Moeilijk, hoor !



En jij worm,
wat ben jij ?



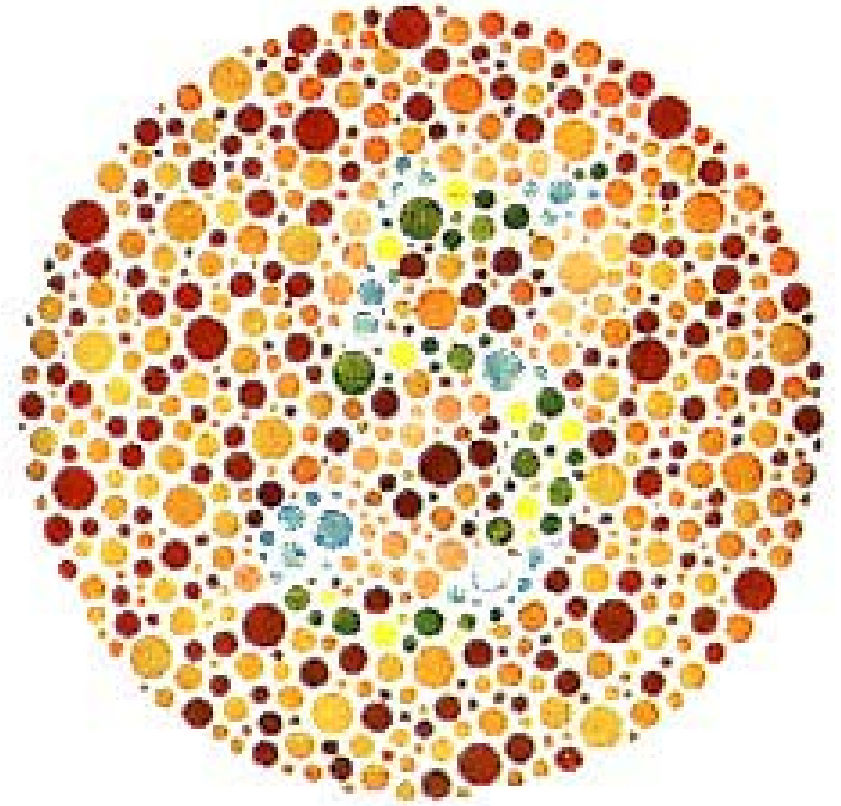
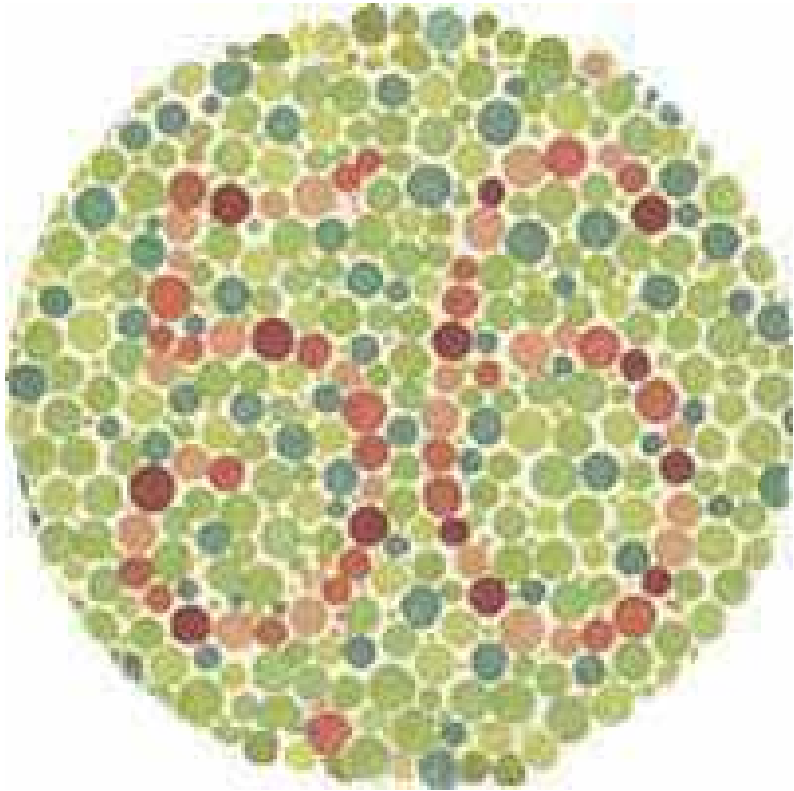
Geen regenworm, me dunkt,
want de zon schijnt hier al
een hele week. Een oorworm
evenmin, want je zit niet in
Lars zijn oor en voor een
lintworm ben je wel een
meter te kort !!!





color blindness or
daltonism
(complete)

Colour blindness is more often only partial



The individual with normal color vision will see a 5 revealed in the dot pattern. An individual with Red/Green (the most common) color blindness will see a 2 revealed in the dots.

Reading impaired persons

- Persons with low vision
- Blind persons
- People with dyslexia
- Severely motor handicapped persons

They have to rely heavily on electronic reading !



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CCTV (TV camera & screen)



Portable Magnifiers



computer with braille reading line



2007: IBM donation to K.U.Leuven libraries



+ Daisy book production software



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Cosy listening corner



Luisterboekenhoek op het jeugdliteratuurfestival Boekids in Amsterdam. © Co de Kruijf/Hollandse Hoogte

Commercial approaches



**Download & listen
to a best seller!**

Your first 3 months ~~\$14.95~~ **only \$7.49 /MONTH**
when you sign up for
AudibleListener

“ Audible.com
offers digital
“books on
tape” for the
intellectually
inclined. ”
– NY Times

The advertisement features a pair of black headphones in the center. Behind the headphones, six book covers are displayed in a 2x3 grid. The top row includes 'The Alchemist', 'Stephen King', and 'John Adams'. The bottom row includes 'A Thousand Splendid Suns', 'Edward Tolle', and another book with a red cover. The background is light gray.

"It really is that easy. You don't need to install any special software. You don't have to join a club and pay a monthly subscription. You don't even have to break the bank as there are lots of titles for just a few dollars. Just get whatever you want, whenever you want, and sit back and enjoy."

Two different commercial approaches: Audible.com (top) and LeisureAudiobooks (bottom)

"Alice In Wonderland" by Lewis Carroll

Do you want to download this audiobook in

Number of Files

- Several mp3-files (**FREE**)
- One zip-file (**\$3 USD Zipping Charges**)
When zip-file is unzipped it contains several MP3 files
- Several mp3-files with [Short](#) filenames (**\$2 USD**)

Size vs. Sound Quality

- | | |
|---|--------------------|
| <input type="radio"/> 8 Kbps [FREE] | Bearable quality |
| <input type="radio"/> 16 Kbps (\$5 USD) | Tolerable quality |
| <input type="radio"/> 24 Kbps (\$6 USD) | Reasonable quality |
| <input type="radio"/> 32 Kbps (\$7 USD) | Good quality |
| <input checked="" type="radio"/> 48 Kbps (\$8 USD) | Very good quality |

AudioBooksForFree.com

Characteristics of commercial audiobooks

- Distributed on audio CD or purely electronic
- Due to limited recording time on an audio CD (Red book standard), one printed book leads to many CD's
- Therefore: tendency to produce abridged books (sometimes 50% !)
- Almost no navigation structure
- Technical:
 - Human read
 - Reluctancy to use open formats (-> copy protection)
 - Examples “.aa” (audible.com) or “.mp4” (iPod).
 - Seldom mp3

Human vs. Computer speech

- 99% of both commercial and specialised audiobooks are read by human narrators
 - Expensive
 - Time consuming
 - Good to very high quality
 - Books sometimes read by the author or by well known media artists
- nowadays Text-to-Speech software (TTS) produces a reasonable quality for synthetic voices
 - Cheap
 - Rapid
 - Moderate (& adaptable) quality
- Sometimes TTS is the only viable option (for a daily newspaper e.g.)



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Specialised production centres for audiobooks

- Specialised centres for the blind all over the world, now serving all groups of reading impaired persons
- Audiobooks have been distributed in the past on vinyl disks, tape reels , cassettes...
- Daisy consortium was created in 1996 to produce a new worldwide standard for **talking books on CD**
- Technical:
 - Data cd (other digital media also possible, e.g. SD-card)
 - Text (if made available): *xhtml* or *xml*
 - Audio files (mainly *mp3*)
 - Navigation structure *ncc* (daisy 2.02) or *ncx* (daisy 3.0)
 - Books can be read via computer or with specialised players



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Daisy's functional requirements

- Ability to skim the text, phrase by phrase or section by section, where section is a collection of phrases.
- Ability to search for different parts in the text-based table of contents.
- Ability to search for specific pages in the talking book.
- Ability to place and search for bookmarks in the book.

and in a future version:

- Ability to underline and make notes in the talking book.



Daisy Players (cd)



Compact Daisy/audiobook Players



Reading from SD-card cards, or directly from the web (right)



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Electronic reading for persons with dyslexia

- They prefer a visual representation of a document (as that gives them an overview);
- But when starting to read, they switch to a narration mode as listening is much easier for most of them;
- *Kurzweil 3000* & *Sprint* software packages permit this rapid switching;
- Preferred input format: MSWord, tagged PDF, sometimes with audio tracks embedded (fast) or generated on the spot (slower but more flexible)





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Audiobooks: copyright protection measures

- Audible.com has developed the proprietary .aa format and provides free software for playing (legal) .aa files on 290 platforms. This format also caters for different quality levels. The most expensive versions can be burnt on an audio cd (but legally not turned into mp3)
- Apple i-Tunes used mainly the proprietary MP4 format (a container format, including the media and DRM info) which made it impossible for some time to use the files on non-iPod players.
- DRM is not very useful: all streaming audio or video data have to be transformed into an *analogue signal* to be interpretable by human beings; but analogue signals can be re-digitised afterwards.
E.g. it was found that a new iTunes music track (with DRM) made available from Apple on the internet needed less than 3 minutes to become available elsewhere on the web in an unprotected audio format...
- But the most striking difference of all these solutions with the Daisy format is the lack of any sensible navigation system through the audio files. The available solution, the Daisy standard is not used in the commercial audiobook world!

Audiobooks: new cataloguing issues...

A comprehensive cataloguing process requires a whole new series of descriptive items including but certainly not limited to:

- flags for abridged and unabridged versions;
- a field for total reading time;
- fields for technical recording specifications (e.g. audio quality/sampling frequency; file types, use of Daisy standards 2.02 or 3.0 etc.);
- a field to distinguish between recorded/synthesized speech;
- fields for the narrator's details;
- flags for pronunciation details (UK English vs American, Austrian or Swiss German vs Standard German, Dutch vs Flemish intonation etc..).
- fields describing the audio-to-text linking mechanisms used in the audiobook (if the text is made available too): synchronisation between text and audio on a word, a paragraph or a page level.
- some of these requirements resemble the cataloguing needs for books in large print or multimedia documents in general. These topics are actually under the remit of a special section within the International Federation of Library Associations (IFLA) that caters for the needs of reading impaired users

Finally, what about electronic books via the internet...

- Small study at K.U.Leuven (Dec. 2008):
 - Some e-books are just a collection of scanned pages
 - Some use PDF or similar but in general only a page by page download is possible
 - Sometimes Flash is used but is not accessible (not compatible with screen readers)
- Conclusion: caution needed!

Thank you

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Newspaper publisher in accessible formats

