


LIBR 614B Visual Literacy for Information Professionals  
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## Recent research projects

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## Outline

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- Research interests
- Audio description projects
- Variable media projects
- Localisation projects
- Next steps

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Research interests • Audio description • Variable media • Localisation • Next steps

## Research interests

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- Indexing moving images
- Storage and retrieval of still pictures
- Metadata for networked moving images
- Preservation of digital moving images
- Translingual storage and retrieval (a/v, mm)
- Audio description
- Localisation

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## Moving images

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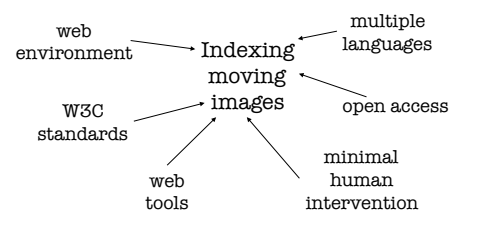
- General research problem: indexing shots by recycling text produced for other purposes:
  - subtitles
  - audio description
  - production notes
  - scripts broken down for the shoot
  - editors' logs
  - camera reports
  - many others

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## Other aspects

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graph TD
    WE[web environment] --> I[Indexing moving images]
    ML[multiple languages] --> I
    OA[open access] --> I
    MHI[minimal human intervention] --> I
    WT[web tools] --> I
    W3C[W3C standards] --> I
    
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## Previous work

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- Determining the subject of still & moving images (PhD thesis, 1994)
- Comparing user-assigned terms with indexers' terms for the same shots (1995)
- Audio description as a tool for indexing moving images (1998)
- Using shooting scripts for indexing moving images (2005)
- Using ancillary text to index cultural objects on the web (2006)

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## Audio description projects 1

- Audio description: voice track for blind and visually impaired (film, tv, theatre)
- Audio description as a tool... (1996-1999)
- The first ½ hour of 3 productions (This Old Pyramid, Poirot episode, Jurassic Park)
  - ½ of shots are described
  - description “episodes” mostly occur within 2 shots before or after
  - typology of things described (costume, action, etc.)

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## Audio description projects 2

- Sources of metadata... (2000-2003)
- Two feature length productions (Cher Olivier 1 & 2)
  - Production script, subtitles, audio description
  - Refined methodology for where shots occur
  - Refined typology

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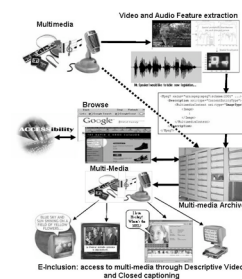
## The E-Inclusion Research Network

- <http://e-inclusion.crim.ca>
- Funded mainly by Canadian Heritage
- Partnerships with ÉTS, McGill, UdeM, ULaval
- Also CNIB, NFB, AudioVision, a dozen others
- 2005-2007:
  - access to audiovisual material for deaf/hearing loss
  - access to audiovisual material for blind/vision loss
- 2007-2009:
  - quality of description, testing video player

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## Mostly low-level approaches

- shot detection
- scene detection
- face recognition
- voice recognition
- voice synthesis
- gait and gesture
- High-level approach: text manipulation



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## Our sub-project

- Audio description for films and television
- Background: new CRTC regulations for digital channels
- As a pilot project, the NFB describing about 200 films (many already online)

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## Audio description projects 3

- First E-Inclusion project (2006-2007)
  - analysing 11 films shot by shot (two feature length + NFB shorts)
  - some experimental (Norman McLaren)
  - refining typology (stable now)
  - viewing and discussion with blind and visually impaired people

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## Objectives

- Validate typology of information elements
- Compare types of information in description to user needs
- Compare English text with French
- Recommendations/guidelines for describers

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## Method

- Analysis of 11 productions using method developed in previous projects
  - identify individual shots
  - transcribe audio description text
  - relate it to corresponding shots
  - write shot descriptions before viewing with sound

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## Productions analysed

Code	Titre de la production	Langue	Réalisateur	Année	Durée	Type	Support	Fournisseur
A	La vie est un long fleuve tranquille	Français	Stéphane Cluette	1999	1h30	Long métrage	DVD	DFCA
B	Le Fabuleux destin d'Amélie Poulain	Français	Jean-Pierre Jeunet	2001	1h26	Long métrage	DVD	DFCA
C	Yves	Français	Roman McLean	1992	1h09	Animation	DVD-TCBI	ONF
D	Mes voisins	Anglais	Roman McLean, Claude Jutra	1991	1h10	Animation	DVD-TCBI	ONF
E	Il était une fois	Français	Roman McLean	1996	1h04	Animation	DVD-TCBI	ONF
F	A Charybde	Anglais	Roman McLean	1995	1h05	Animation	DVD-TCBI	ONF
G	Le merle	Français	Roman McLean	1996	1h04	Animation	DVD-TCBI	ONF
H	Le merle	Anglais	Roman McLean	1996	1h04	Animation	DVD-TCBI	ONF
I	Stinky Spark	Anglais	Roman McLean	1995	1h05	Animation	DVD-TCBI	ONF
J	Stinky Spark	Anglais	Roman McLean	1995	1h05	Animation	DVD-TCBI	ONF
K	Capitaine de Noël	Français	Christophe Choulet	1993	1h09	Animation	DVD-TCBI	ONF
L	Christophe Choulet	Anglais	Hélène, Gerald Pottinger	1993	1h09	Animation	DVD-TCBI	ONF
M	Mon hip	Français	Roman McLean	1992	1h04	Animation	DVD-TCBI	ONF
N	Mon hip	Anglais	Roman McLean	1992	1h04	Animation	DVD-TCBI	ONF
O	En toute sécurité	Français	Julia Weldon	2004	1h05	Animation	DVD-TCBI	ONF
P	Monne Security	Anglais	Julia Weldon	2004	1h05	Animation	DVD-TCBI	ONF
Q	Calcutta: des plaines de l'ouest	Français	Rex Taylor	1996	1h14	Documentaire	DVD-TCBI	ONF
R	Settlement on the Western Plains	Anglais	Rex Taylor	1996	1h14	Documentaire	DVD-TCBI	ONF
S	Als pays de East	Français	Martin Duckworth	1996	1h09	Documentaire	DVD-TCBI	ONF
T	East Country	Anglais	Martin Duckworth	1996	1h09	Documentaire	DVD-TCBI	ONF

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## Shots and audio description

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## Types of information given

- Action
- Information about attitudes of characters
- Decor
- Lighting
- Spatial relationships between characters
- Facial and corporal expressions
- Clothing
- Movement of characters
- Physical description of characters
- Indicators of proportions
- Occupation, roles of characters
- Setting
- Description of sound
- Temporal indicators
- Text information in image
- Appearance of titles
- Credits
- Audio description

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## Typology with examples

Code	Titre de la production	Description	Exemple
le	Information about attitude of characters	Stance of movement, gaze	Amélie = Elle lui fait signe de venir en arrière... (00:21:14)
Decor	Information sur l'attitude des personnages qui reflète un état d'esprit	Information sur l'attitude des personnages qui reflète un état d'esprit	Amélie = Ça change souvent de l'air, mais ses lunettes noires... (00:25:15)
4pe	Lighting	L'ensemble des éléments qui représentent les lieux où se passe une scène (SDT)	La vie = Dans la cuisine... (00:59:46)
z	Spatial relationships between characters	Information sur la lumière, l'éclairage naturel ou artificiel dans la scène	Amélie = Soit un soleil jaune d'or... (00:00:48)
vision	Facial and corporal expressions	Relation spatiale entre les personnages	Amélie = Vous deux pouvez être côte à côte... (00:26:00)
smect	Clothing	Expression faciale et des corporelles des personnages, signes et attitudes apparentes	La vie = Elle porte un bonnet de laine blanc, un amant et des gants noirs... (00:11:41)
smect	Weather	Ensemble de tous les vêtements et accessoires que revêtent, portent et tiennent le corps des personnages (SDT)	Stinky = Il fait soleil dans le quartier agréable... (00:00:22)
smect	Movement of the characters	Météo	La vie = Le mal se lève... (00:00:05)
per	Physical description of the characters	Mouvement, déplacement des personnages	Amélie = Un homme barbu... (00:47:16)
smect	Indicators of proportions	Description physique des personnages, description des caractéristiques physiques	N/A
smect	Occupation, roles of the characters	Indicateur de proportion, de dimensions	Amélie = La vendeuse... (00:44:40)
smect	Setting	Mise en scène, organisation spatiale du plan, environnement	Amélie = A table chez son père... (00:13:29)
smect	Description of sound	Description du son, des bruits, environnement	N/A
z	Temporal indicators	Indication temporelle, contre ou langue française	Amélie = Au revoir, il est 4 heures... (00:55:41)
smect	Textual information included in the image	Information textuelle dans l'image	Amélie = Elle lui fait signe... "prière" et un message de téléphone... (00:34:20)
smect	Appearance of titles	Séparation, usage de titres et sous-titres, etc.	Mon hip = Un générique... (00:00:00)
smect	Credits	Information relative au générique	Chaque = Un générique de Norman McLaren & Claude Jutra. Sur une musique de Rex Stedley & Charles Lab... (00:00:26)
vision	Audio-description	Information relative à l'audio-description dans le film	Amélie = L'Association Valentin Haüy a produit l'audio-description de ce film... (00:51:20)

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## Audio description & image description

- Here we want to compare:
  - keywords found in the audio description text with
  - keywords in a written description of each shot
- Objective: find out if one type of text is more fruitful than the other for generating indexing terms

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## Orange keywords appear in both



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## Analysis for 6 chapters

- Total 238 shots
- 50 shots (21%) have no keywords in common
- For the 188 remaining shots, 463 keywords appear in both types of text

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## Observations

- Essential keywords appear in both, other useful keywords in one or the other
- For indexing: one or the other text source ok, but both better

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## Improve this performance

- If queries got filtered through a thesaurus, synonyms could also be searched in the text
- This should improve performance
- However, performance is already quite good

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## Why this is good indexing

- Interindexer consistency studies: the success rate is only about 50%
- Our own studies: art pictures require special knowledge to index, but everyday pictures do not
- User indexing, tagging à la flickr, YouTube, MySpace is widespread
- Some information science studies on this

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## Other aspects

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- Since indexing by humans is so expensive, shot-level indexing will only happen if it is automated
- Exceptions: stockshot libraries, tv newsrooms
- Where we need to invest: automatically identify indexing terms, tag them, attach them to shots

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## Audio description projects 4

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- Second E-Inclusion project (2008-2009)
  - testing video player (<videodescription.crim.ca/app/>)
  - viewing and discussion with blind and visually impaired people
  - 2 groups (completely blind / visually impaired)
- Completed 2009.03.31, writing reports now

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## Variable media projects

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- Touched on this question in InterPARES2
- DOCAM (Documentation and conservation of the media arts heritage / SSHRC, Daniel-Langlois Foundation, partners, 2005-2009)
- <[www.docam.ca](http://www.docam.ca)>, lots of information available

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## Variable media art

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- Art that relies heavily on technology, changes over time
- Push computers past their limits, hack chips, write weird programmes, interact with physical objects, humans...
- How to buy, preserve, re-exhibit a big headache for museum people
- The key: copious metadata

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## DOCAM seminar

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- People from Queens (master in art conservation) worked on DOCAM, but no courses offered in their programme
- DOCAM seminar (over 5 years, alternately English and French, McGill and UQÀM [=Université du Québec à Montréal])
- New home: UQÀM/UdeM museology programme (joint master's)
- Clientèle: largely information studies students

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## Terminology committee

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- Provide definitions for variable media terms (English & French)
  - Glossary
  - Thesaurus
  - Ontology?
- Using SKOS (Simple Knowledge Organization System)
- Glossary/thesaurus online, research reports 2009

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## Localisation projects

- MultiCulture (link from JT web site): documentation, glossary, resources in English, French, Arabic, Spanish)
- IFLA/MIC project (IFLA AVMS with LC/AMIA/MIC)

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## What's localisation?

- Translating is not enough, you need to include social, cultural aspects
- Make resources (computer software, web sites, etc.) usable to others
- Transcreation: not direct translation, rather adapting text to read naturally

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## MIC project (2006-2007)

- Moving Image Collections (mic.loc.gov) aims to be “a window to the world’s moving images”
- But the site is only available in English
- Funding from IFLA FAIFE (Committee on Free Access to Information and Freedom of Expression)

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## Localising the MIC site

- Objective: build a kit for localising to any language/ethnic group
- Test the kit with French, Arabic, Spanish
- AVMS partners in Montréal, Alexandria, Montevideo

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## Method

- We chose key pages on MIC site, hired research assistants to build the pages using the kit
- They got source code from MIC site, changed info between tags, found new pictures, cataloguing examples, identified issues
- Because of problems at MIC, localised pages not yet installed

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## Next steps

- Identify levels of description, types of information with XML tags, so audio description users can choose
- Assess to what degree audio description could be automated using existing text, voice recognition, gesture analysis, facial expressions, and so on
- Variable media programmes in universities
- Better identify cultural markers for localisation
- Build systems using hybrid approach (low-level and high-level indexing)

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## Video clip

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- An interesting example of what's coming
- `<http://www.ted.com/index.php/talks/blaise_aguera_y_arcas_demos_photosynth.html>`
- Good example of hybrid approach
- Propagating indexing terms: a new approach nobody would have dreamed of

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# The End

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