

Multilingual Image Search from a user's perspective



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QUAERO-Image CLEF workshop, 16/09/08



Finding is a matter of two

smart
slow

fast
stupid



great potential
for interaction

Finding is a matter of two

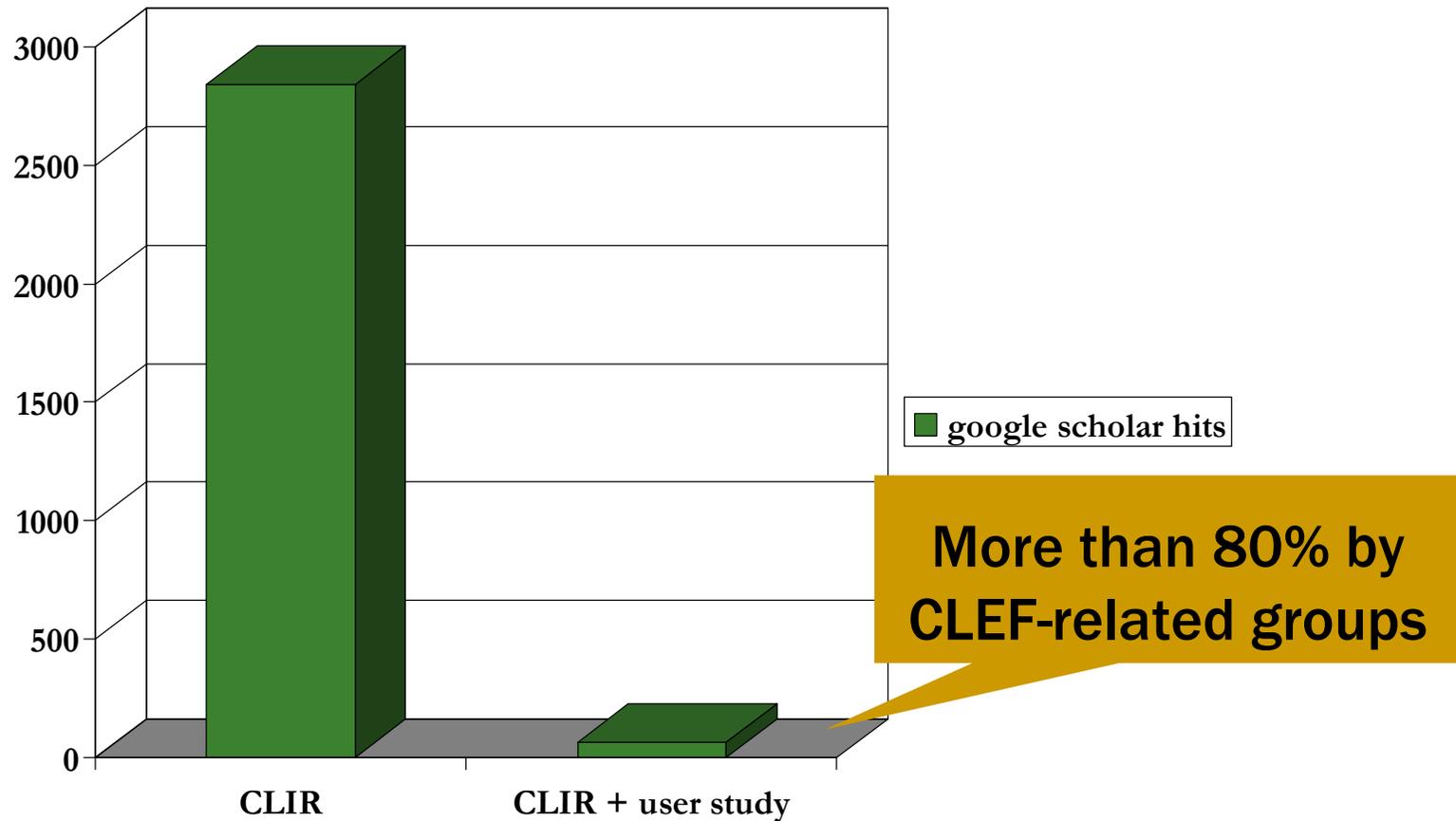
(often) smart
Slow
(often) do not
know what they
are looking for

fast
stupid



Great potential
for interaction

Research in user-oriented CLIR



iCLEF methodology: hypothesis-driven

- Reference system + contrastive system
- Sample tasks (topics)
- set of users
- latin-square pairing between system/topic/user to detect system effects and avoid undesired correlations.
- Features:
 - Controlled (vs. ecological)
 - Hypothesis-based (vs. operational)
 - Deductive (vs. inductive)
 - Sound methodology from a scientific perspective

iCLEF 2001-2005: tasks

On newswire

- Cross-Language Document Selection
- Cross-Language query formulation and refinement
- Cross-Language Question Answering

On image archives

- Cross-Language Image search.

iCLEF 2001-2005: problems

- Unrealistic search scenario, user sample opportunistic
- Latin-square design not cost-effective
 - Only one aspect of CLIR at a time
 - High cost of recruiting, training, observing users.
- High cost of entry, Low participation

Goals for iCLEF 2006 - 2008

- Find **realistic scenarios** where multilingual search arises naturally
- Reduce the **cost of entry** for new participants.
- Explore **new experiment designs**.

Flickr

Abrete Sesamo

Uploaded on June 16, 2005
by [Lou Rouge](#)

Lou Rouge's photostream
236 photos
View as slideshow

This photo also belongs to:

- Curiosidades (Set)**
52 photos
View as slideshow
- Verde (Set)**
29 photos

Comments

ramond says:
Muy buena Lou Rouge, a ver si, si me dejas tu camara que la mia no tiene tantos aumentos, tu sacas afotos buenas por tu camara, guapa, por eso
Posted 3 months ago. ([permlink](#))

Amelie pro says:
Bella foto mi piace molto what it opens?
Posted 3 months ago. ([permlink](#))

Spanish

Italian

English

Japanese

iCLEF 2006

Topics

- ❑ **Ad hoc:** find as many photographs of (different) european parliaments as possible.
- ❑ **Creative:** find five illustrations for this article about saffron in Italy.
- ❑ **Visual:** What is the name of the beach where this crab is lying on?

Methodology

- ❑ Participants must propose their own evaluation measures and experiment design.



Explored issues

- **user's behaviour**

- How users deal with native/passive/unknown languages?
- Do they actually use CLIR facilities when available?

- **user's perceptions**

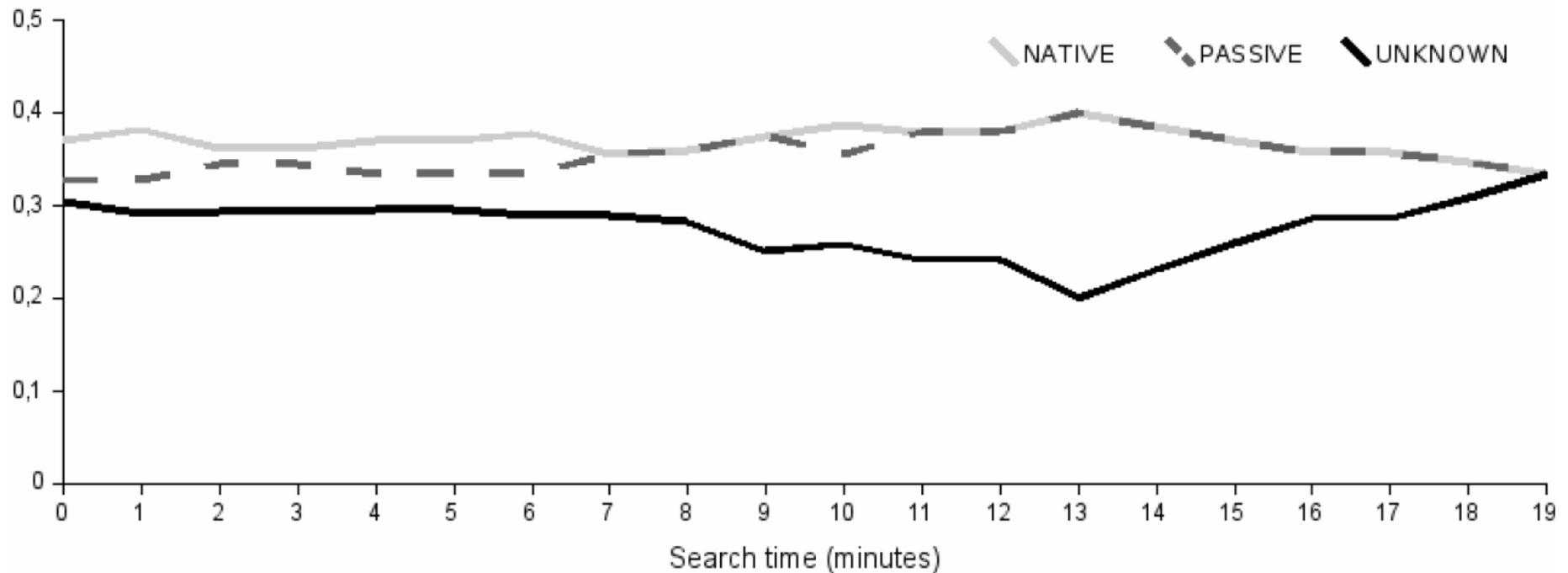
- Satisfaction (all tasks)
- Completeness (creative, ad-hoc)
- Quality (creative)

- **search effectiveness**

- How many facets were retrieved (creative, ad-hoc)
- Was the image found? (visual)

Example result: choice of target languages along time.

use of translation facilities (where is the crab?)



iCLEF 2008

- Cost of entry still high → move to a **search log analysis** task.
- We need more users → make the task an **online game** and engage some user community.

Flickling challenge

iCLEF 2008 task

- Log analysis task.
- Data: logs from an online game (known item retrieval in Flickr) which implies searching in six languages simultaneously.
- Known item retrieval: see this image? Find it!
- Game interface implements reasonable baseline facilities for MLIA.
- Registered users with language profiles (native, active, passive, unknown languages)

Group rank

Flickling - An online game for searching Flickr across language boundaries - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

http://soporte1.lsi.uned.es/flickling/index.html?locale=es#%7B%22start_index%22%3A0%2C%20%22num_results%22%3A2C

sambusa new generati...

Google Buscar

Ranking

Ranking de usuarios Ranking de equipos

Equipo	Puntuación	Tiempo medio	Precisión	Número de u
U.Padua - Linguistics	21825.00	3313.77	0.62	61
dZoom	8340.00	6846.30	0.60	43
Other	6030.00	379.36	0.34	110
U.Padua - 2 Linguistics	5335.00	7986.77	0.58	12
UNED IA	2310.00	6512.22	0.67	7
Manchester Metropolitan Univ	2250.00	44.26	0.68	7
UNED LSI	2125.00	6746.68	0.61	13
LSIIT-CNRS / U.Louis Pasteu	2065.00	17.82	0.96	1
LASIGE / U.Lisbon	1865.00	62.57	1.00	1
PLN / U. of Alicante	1835.00	67.81	0.74	10
U.Twente / Twente	1095.00	964.50	0.72	1
testing	1075.00	187.94	0.29	11
Yahoo / MultiMedia Group - E	1060.00	5492.73	0.84	2
UNED SCC	945.00	5.17	0.31	3

Mostrando equipos 1 - 15 de 44

Page 1 of 3

Cerrar

Encuentra esta imagen

monolingüe multilingüe

violin strauss estatua

escribo en traduce

Español DE EN

Me rindo

Resultados 1-16 de 16 para violin strauss esta

Tal vez quieras intentar con: music fiddle, guitar, live, bw, street... [mo

Strauss

vienna, park, parq música... [mostra

P4302599

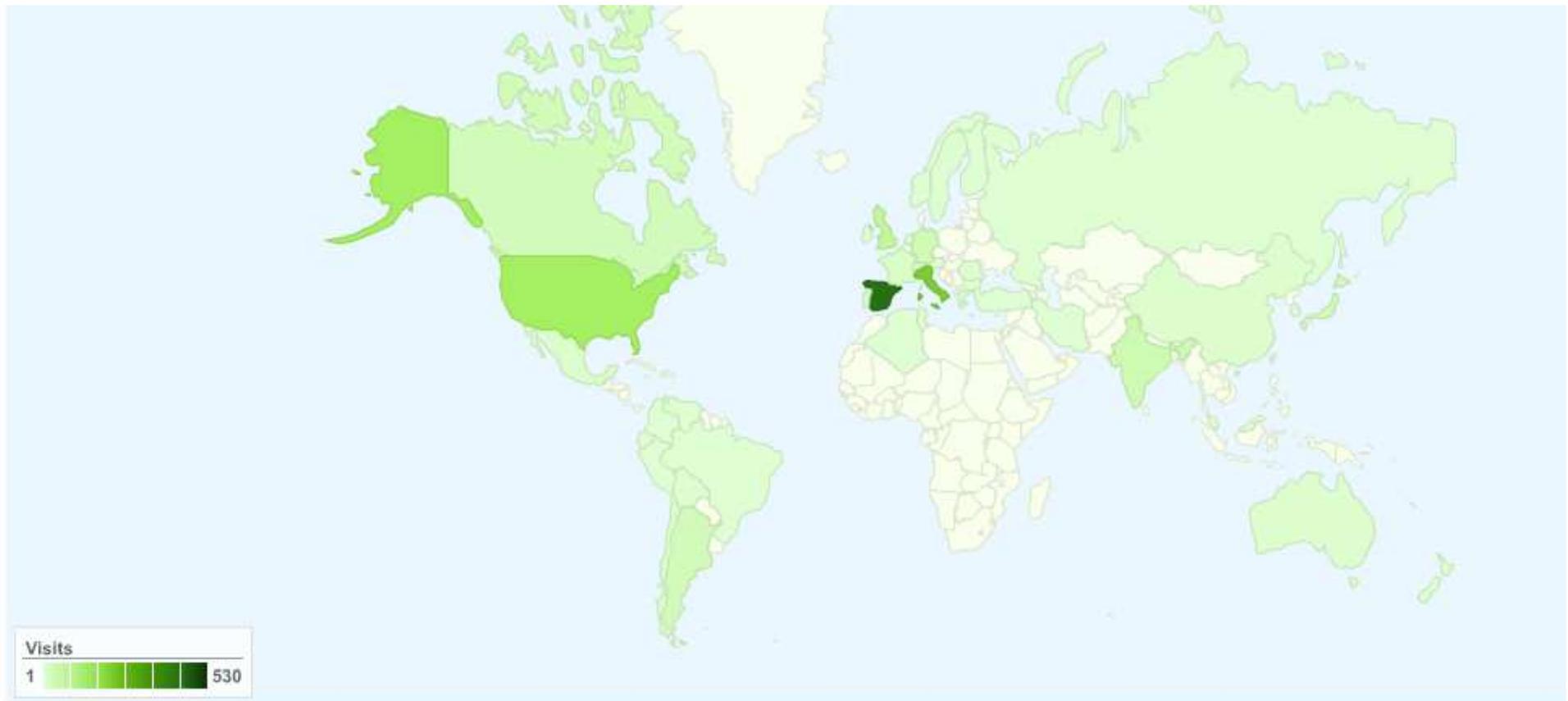
http://soporte1.lsi.uned.es/flickling/index.html?locale=es#

Harvested logs

- 312 users / 41 teams
- 5101 complete search sessions
- Linguistics students, photography fans, IR researchers from industry and academia, monitored groups, other.

Geographic distribution of users

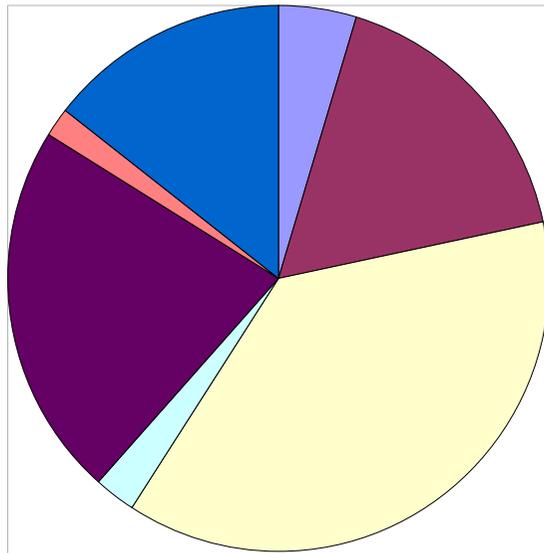
- 312 users, 41 teams, 43 countries



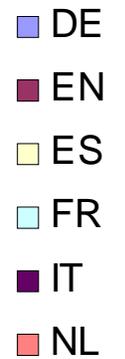
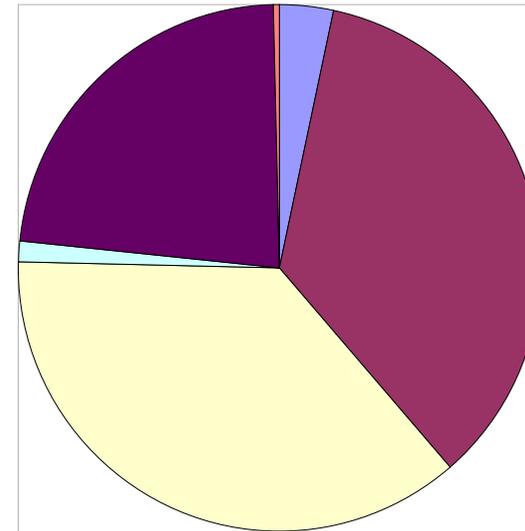
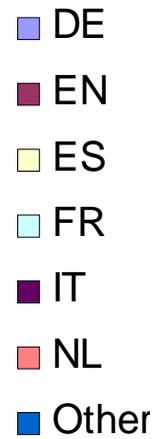
1,428 visits came from 43 countries/territories

Language skills

Native Languages

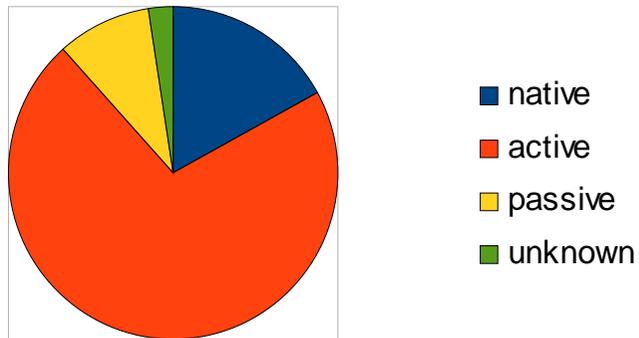


Interface Languages

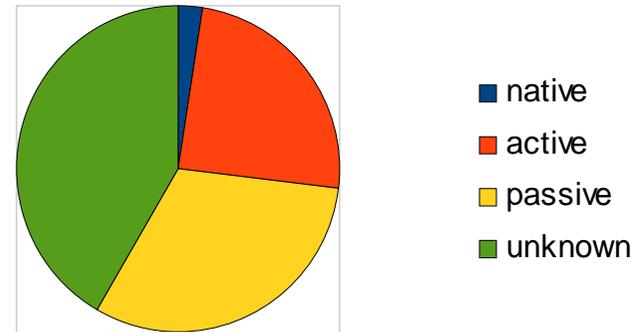


Language skills

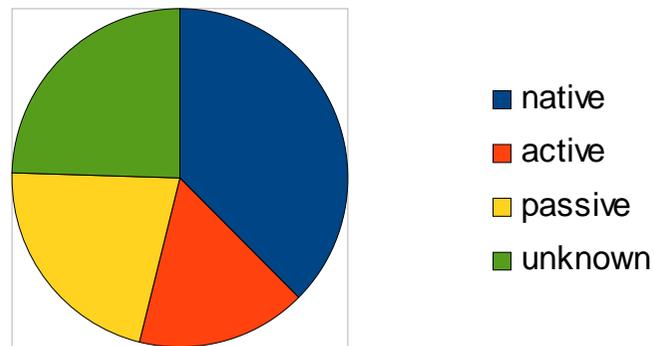
Language Skills: English



Language Skills: French



Language Skills: Spanish



Language Skills: Dutch

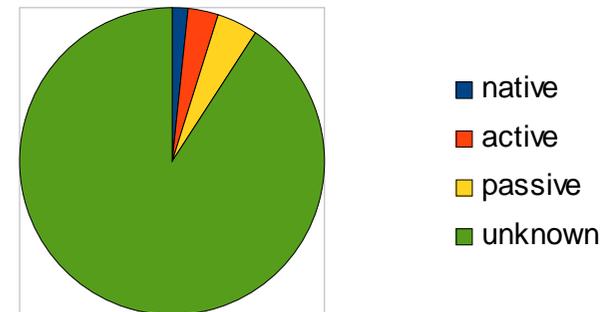
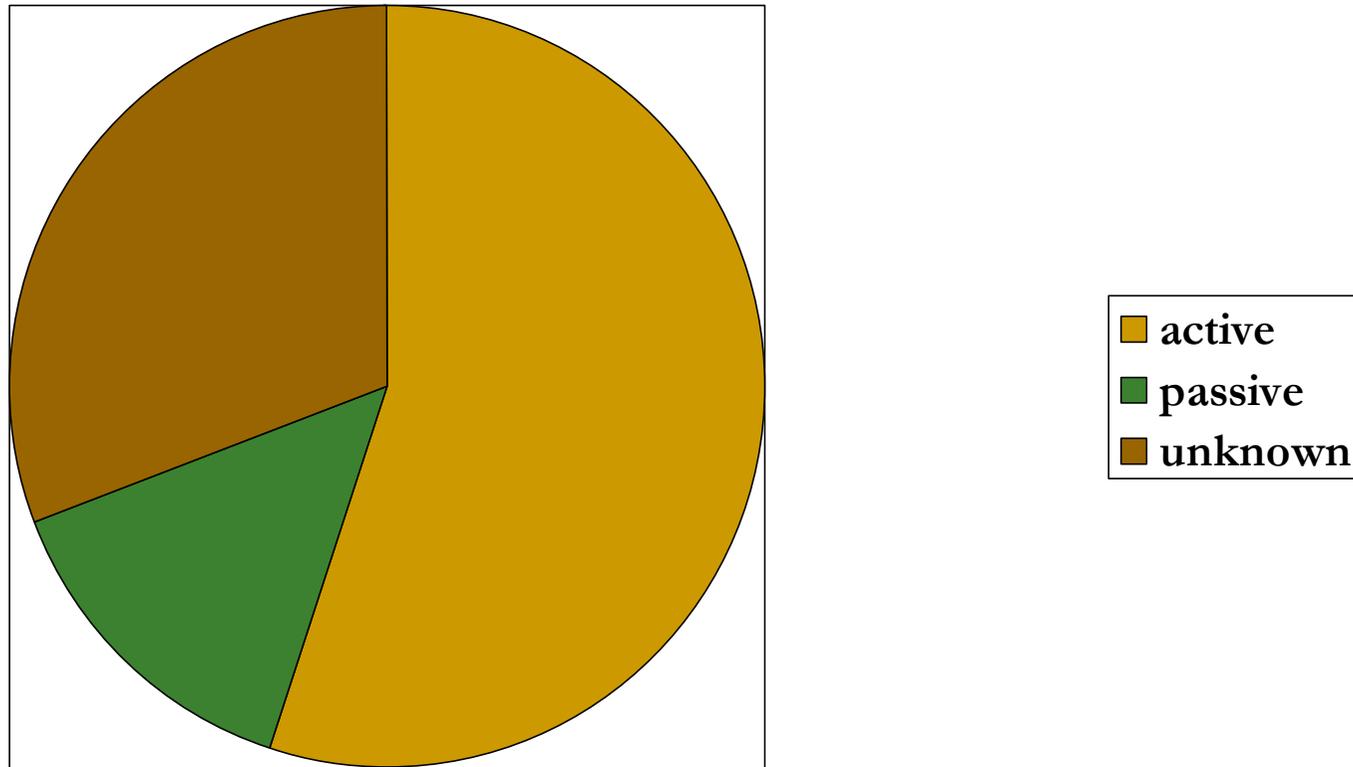


Image was annotated in a language that for the user was:



Participation

- 15 registered groups, 6 submissions
- Plus more than 30 CLEF groups collaborated as users

User's behaviour according to language skills

competence	success	# hints	# queries		refinements		ranking exploration	
			mono	multi	mono	multi	mono	multi
active	82%	2.13	3.96	3.8	3.91	3.76	2.58	2.69
passive	81%	2.18	4.32	4.05	4.27	4.01	3.4	3.14
unknown	72%	2.15	4.5	4.38	4.41	4.28	2.93	3.06

Table 1: User's behaviour according to language skills

Success: ACTIVE \approx PASSIVE \succ UNKNOWN

Effort: ACTIVE \prec PASSIVE \approx UNKNOWN

Use of cross-language refinements

competence	Flickr related terms				usage of	
	new query		query refinement		personal dictionary	
	mono	multi	mono	multi	manipulations	adding new terms
active	1%	1%	2%	2%	4%	7%
passive	1%	1%	3%	1%	6%	9%
unknown	2%	1%	4%	5%	9%	11%

Table 2: Usage of Specific Cross-Lingual Refinement Facilities

Do users learn to use CL facilities?

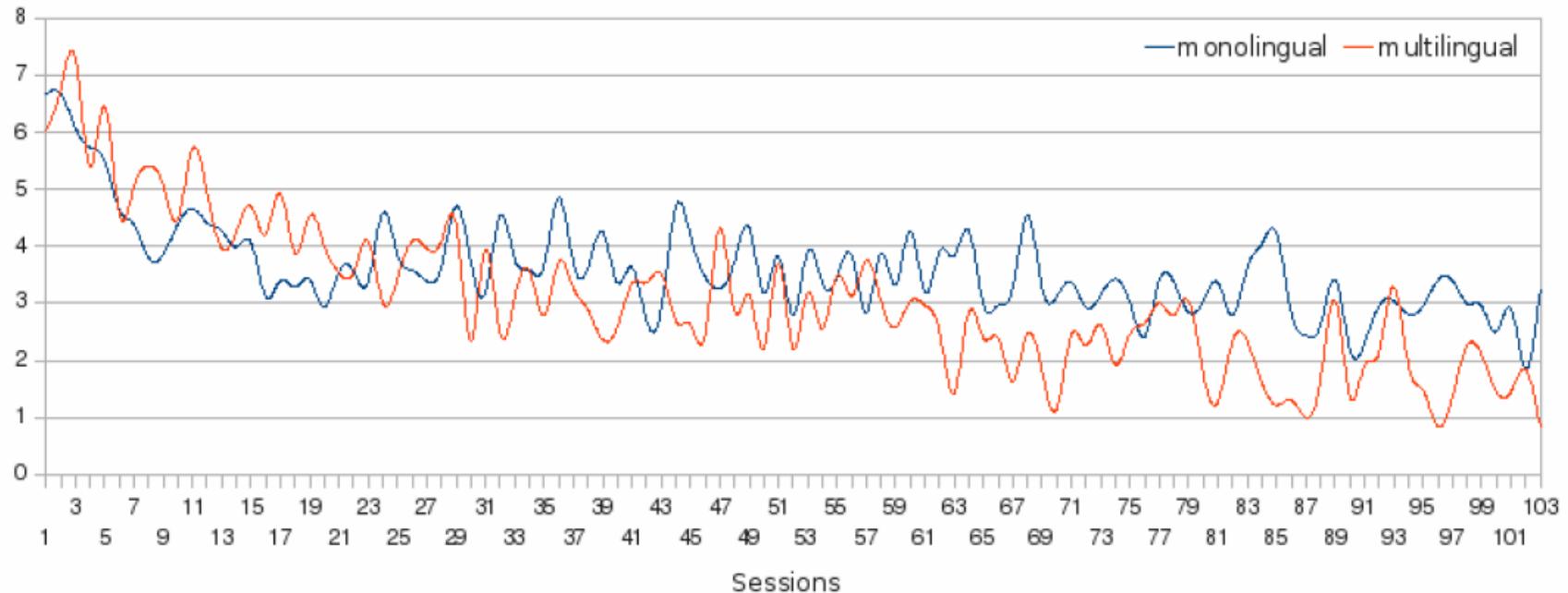
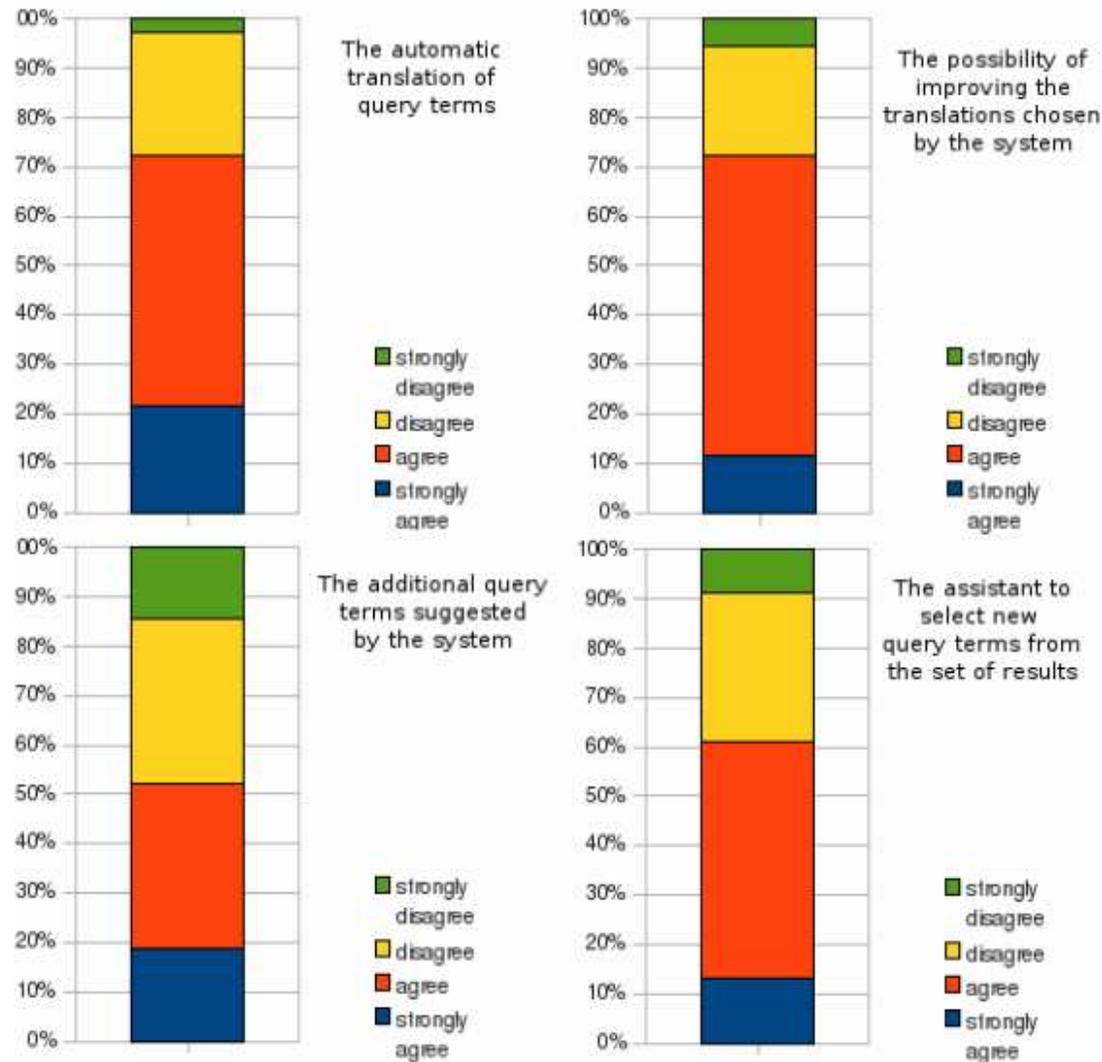


Figure 3: Average direct refinements per sessions performed.

Success rate & #hints keep constant, interactions go down

Usefulness of interface facilities



- Perceived usefulness much higher than actual use!
- Conclusion: occasional use may have a strong impact on user perception

Figure 8: Which interface facilities did you find most useful?

Conclusions

- Flickr is an excellent playground for multilingual image search experiments... And it would be better if we had the data!
- In order to harvest large search logs, (online) game-like tasks work.
- Interface facilities are perceived as very useful in multilingual image search. But logs do not provide perceptions!
- No matter how much we lower the cost of entry, we'll never get participants ;)