Electronic Dictionaries

Points to discuss

- History
- Typology
- Description

Computer versions of conventional dictionaries

- various systems of menu
- suitable structure of material arrangement
- various searching devices, accelerating information retrieval
- storage of information

Advantage of computerized dictionaries

One may:

- transfer from one type of information/knowledge to another one quite easily
- come up with a quick and detailed answer to one's questions

Advantage of computerized dictionaries

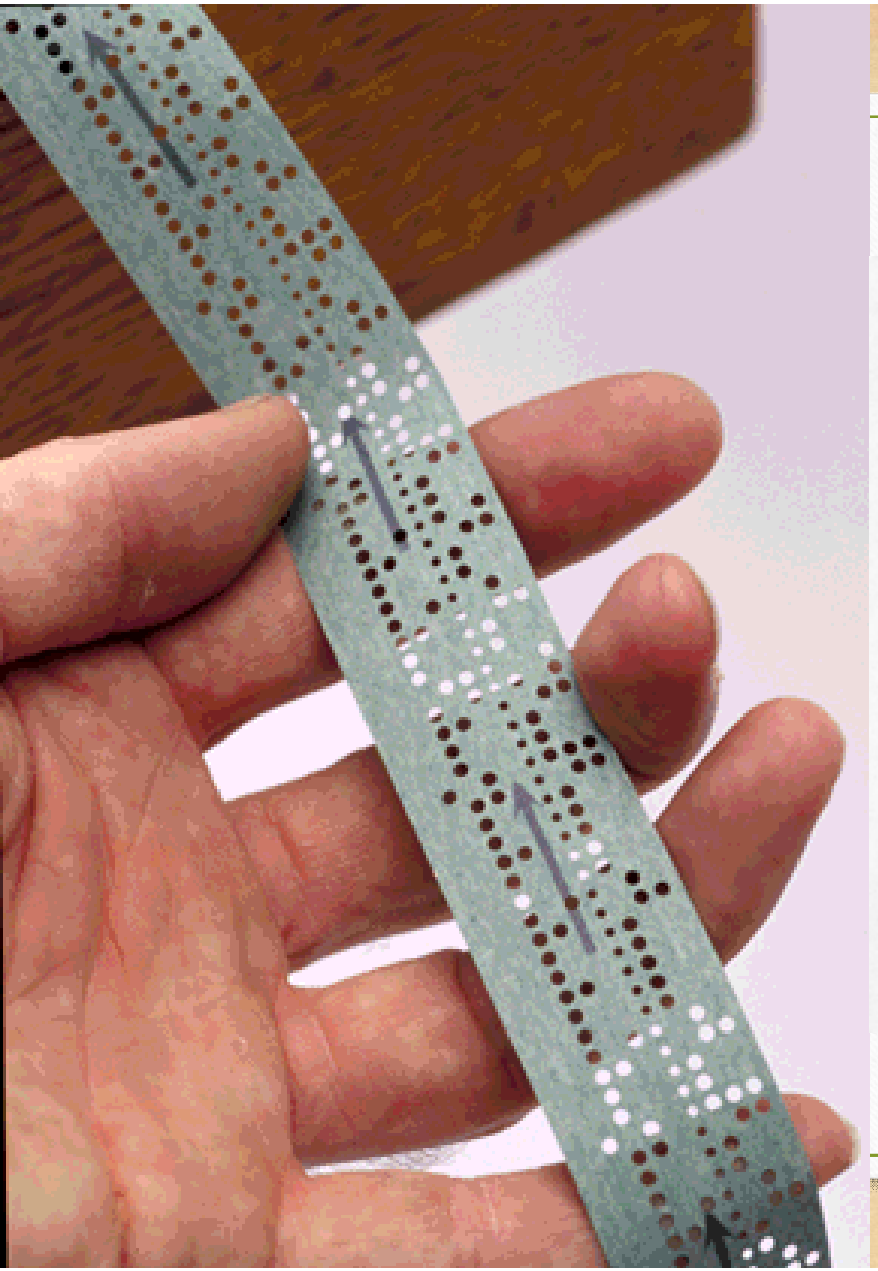
One may:

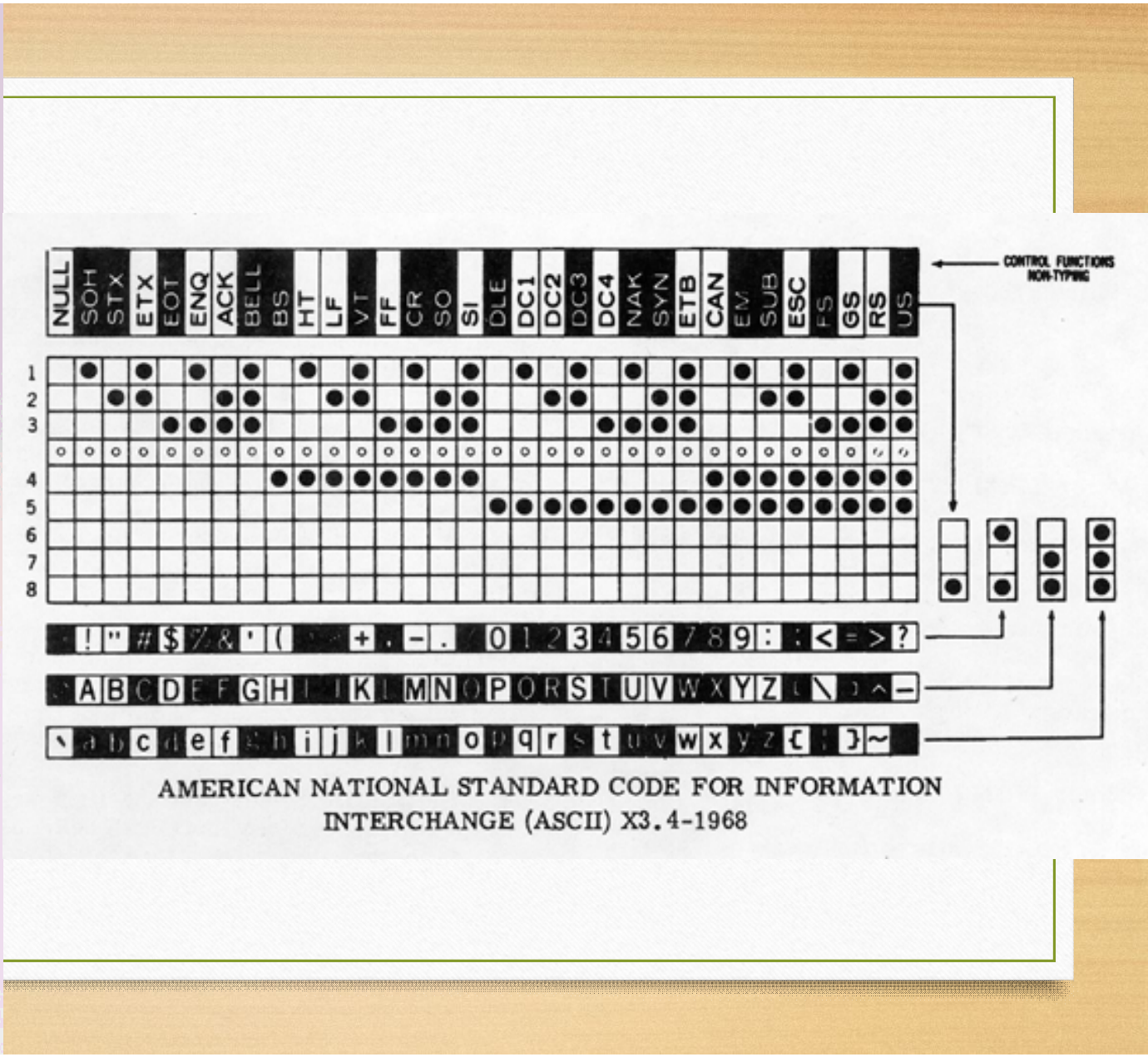
- obtain mostly adequate data without forcing oneself and without browsing a lot of reference books over a long period of time
- gain new possibilities granted by information storage

1960

Webster's Seventh New Collegiate Dictionary

was keypunched onto paper tape from paper text,
for the purpose of computational exploration




NULL SOH STX ETX EOT ENQ ACK BELL BS HT LF VT FF CR SO SI DLE DC1 DC2 DC3 DC4 NAK SYN ETB CAN EM SUB ESC FS GS RS US
CONTROL FUNCTIONS NON-TYPING
1
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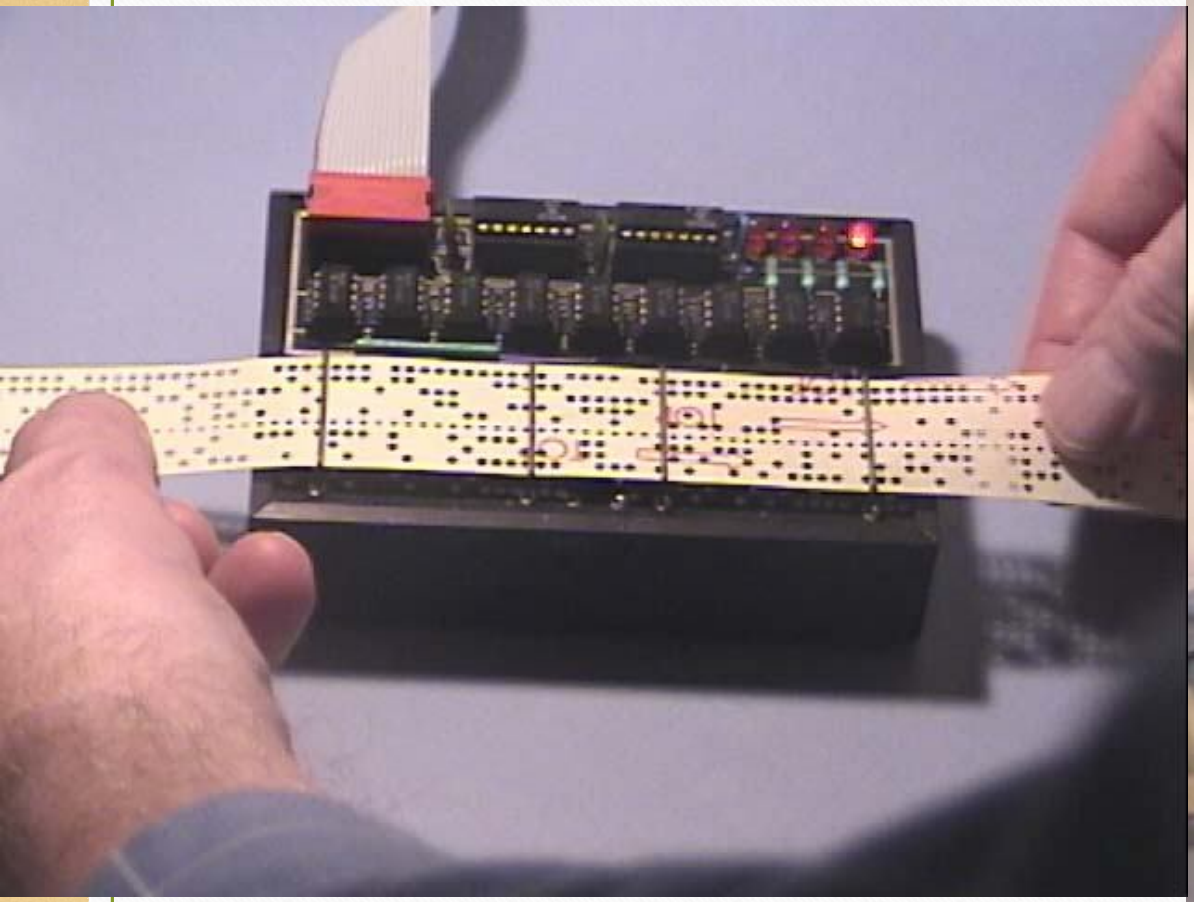
AMERICAN NATIONAL STANDARD CODE FOR INFORMATION INTERCHANGE (ASCII) X3.4-1968



1960

- a by-product of publishing paper dictionaries
- the overall task: the modification and conversion of a flat character stream into a structured format, typically a database accessible by machine

1970-1980

Longman Dictionary of Contemporary English

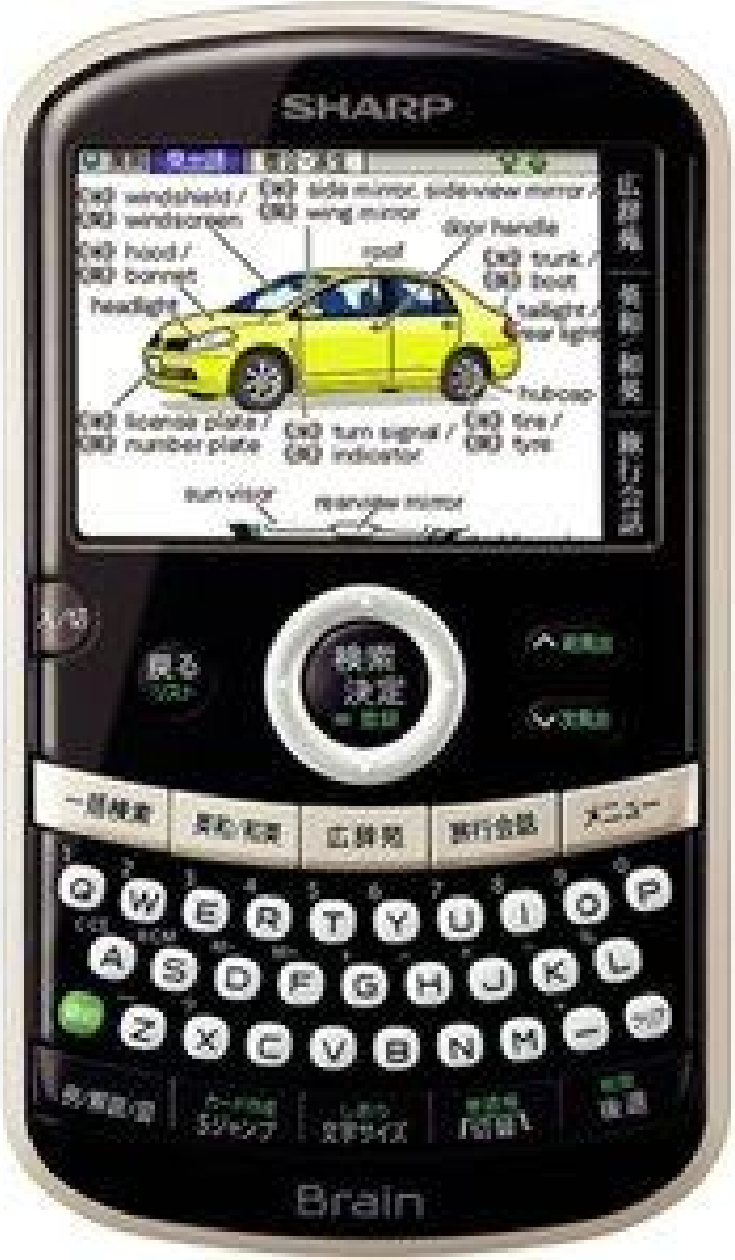
the most widely used MRD (machine-readable dictionary) in NLP (natural language processing)

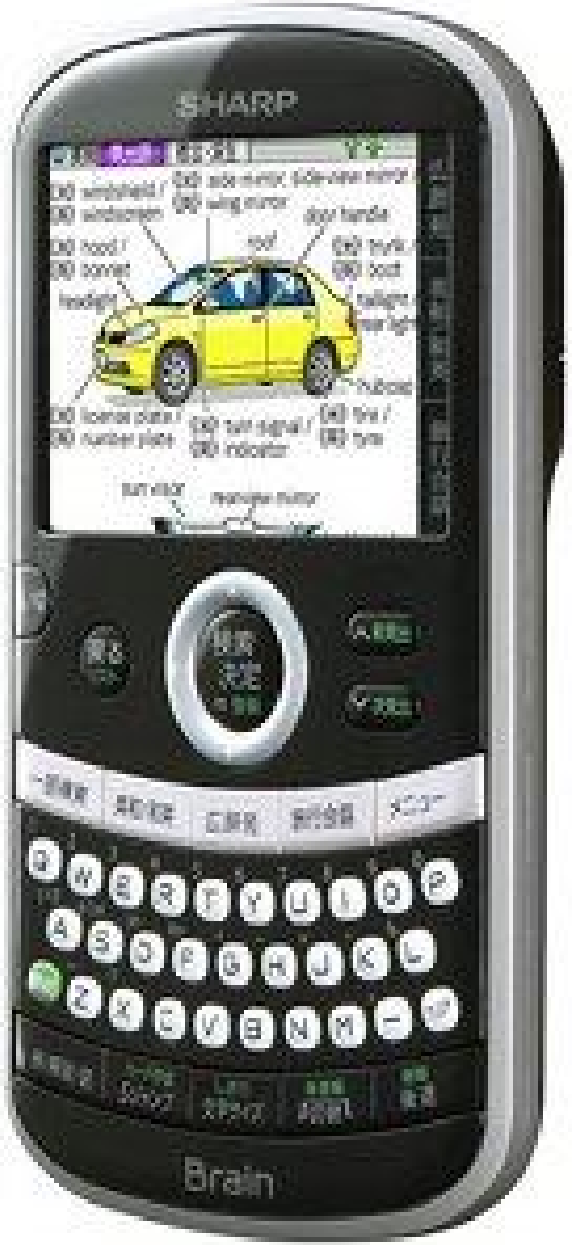
late-1980s

The first humanreadable electronic dictionaries available for the public at large:

- online (whether or not by subscription)
- on CD-ROM and other disks
- in handheld devices


NanoNote
L
R
applications
settings
DGClock
GMU
StarDict
Explorer
0
300Mhz
qi-hardware.com
F1 F2 F3 F4 F5 F6 F7 F8
esc
tab
alt
fn
ctrl
enter
vol


SHARP
windshield /
windscreen
side mirror, side-view mirror /
wing mirror
door handle
roof
hood /
bonnet
trunk /
boot
headlight
taillight /
rear light
hubcap
license plate /
number plate
turn signal /
indicator
tire /
tyre
sun visor
rearview mirror
検索
決定
一括検索
英和/和英
広辞苑
実行会話
メニュー
Brain


SHARP
Brain


curious full of
wonder
TALKING DICTIONARY
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
ENTER
BACK

Nesi's definition for 'electronic dictionary'

'The term electronic dictionary (or ED) can be used to refer to any reference material stored in electronic form that gives information about spelling, meaning, or use of words.

Nesi's definition for 'electronic dictionary'

- a spell-checker in a word-processing program
- a device that scans and translates printed words
- a glossary for on-line teaching materials
- an electronic version of a respected hard-copy dictionary

are all EDs of a sort_'

Nesi's definition for 'electronic dictionary'

All these objects are collections of structured electronic data that can be

- accessed with multiple tools
- enhanced with a wide range of functionalities
- and used in various environments

The most innovative aspect of EDs

The retrieval system

Without

- doing something about the contents
- implementing fully integrated hypermedia access structures

The mid-1990s

- The boom in scholarly discussions and the large-scale commercial production of EDs
- The topic of EDs, in addition to being discussed in journals dealing with computer science, language learning and language teaching, made its appearance in (meta)lexicographic publications

Electronic-Dictionary Typologies

- Martin's typology
- Ide's typology
- Sharpe's typology
- Lehr's typology
- Schryver's typology

Martin's typology

- dictionaries for human users
- computer-based dictionaries
- machine-readable dictionaries
- lexical/term banks

Martin's typology

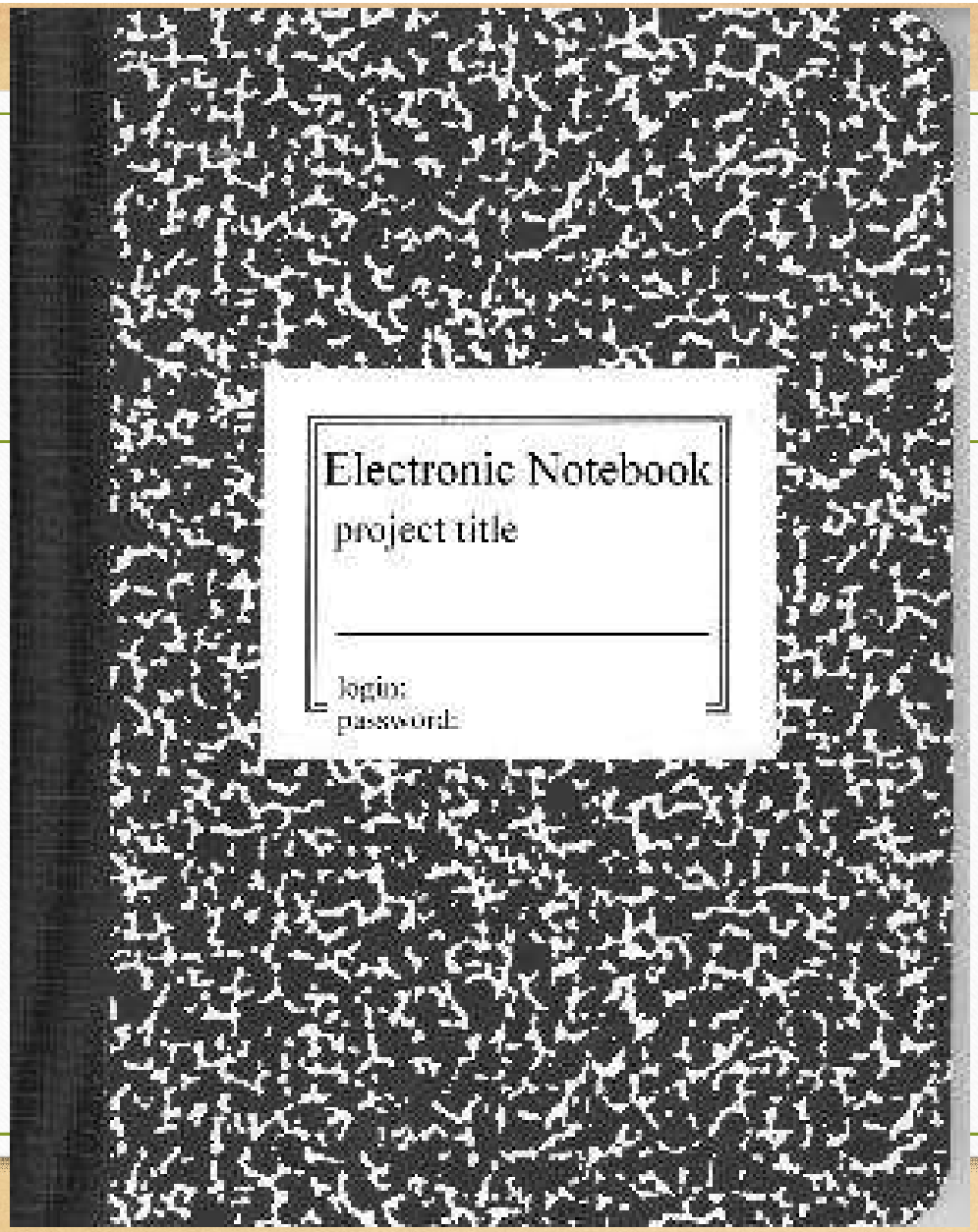
- machine dictionaries
- lexical databases
- artificial intelligence lexicons

Martin's typology

! No attempt is made to differentiate between computational and non-computational 'objects'

Ide's typology

- specific EBDs
- electronic notebooks
- CD-ROM EBDs
- ED software


Electronic Notebook
project title
login:
password:

Ide's typology

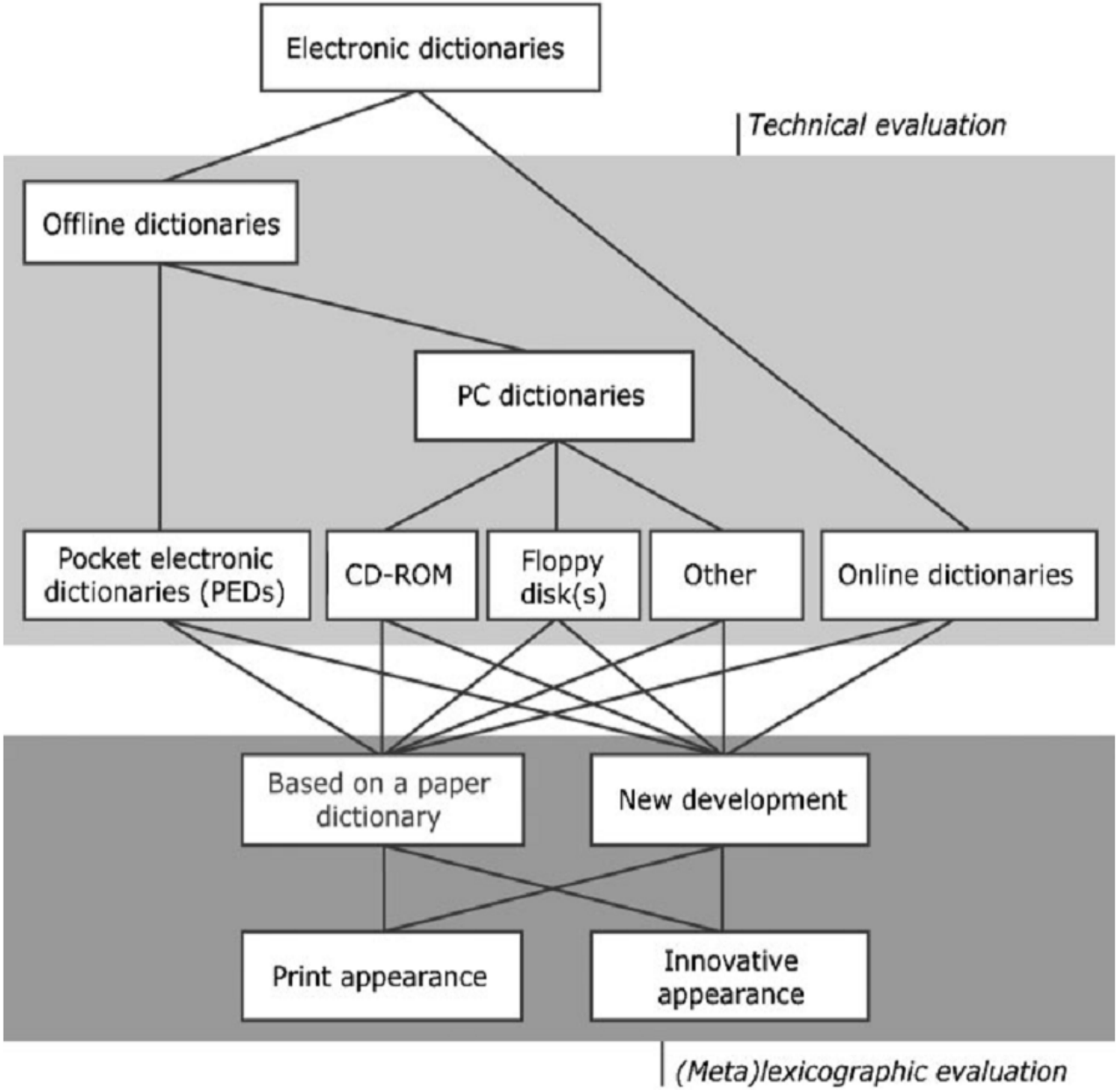
!A typology solely based on hard- and software does not seem to be very efficient, since it requires constant readjustments to cater for the never-ending innovations.

Sharpe's typology

- floppy-disk based portable EBDs
- EBDs with hand-held optical character recognition (OCR) scanners

Lehr's two-step technical-(meta)lexicographic ED typology

- In a first step, EDs are classified on technical grounds
- In a second step, each of these EDs can then be evaluated on (meta)lexicographic grounds


Electronic dictionaries
Technical evaluation
Offline dictionaries
PC dictionaries
Pocket electronic dictionaries (PEDs)
CD-ROM
Floppy disk(s)
Other
Online dictionaries
Based on a paper dictionary
New development
Print appearance
Innovative appearance
(Meta)lexicographic evaluation

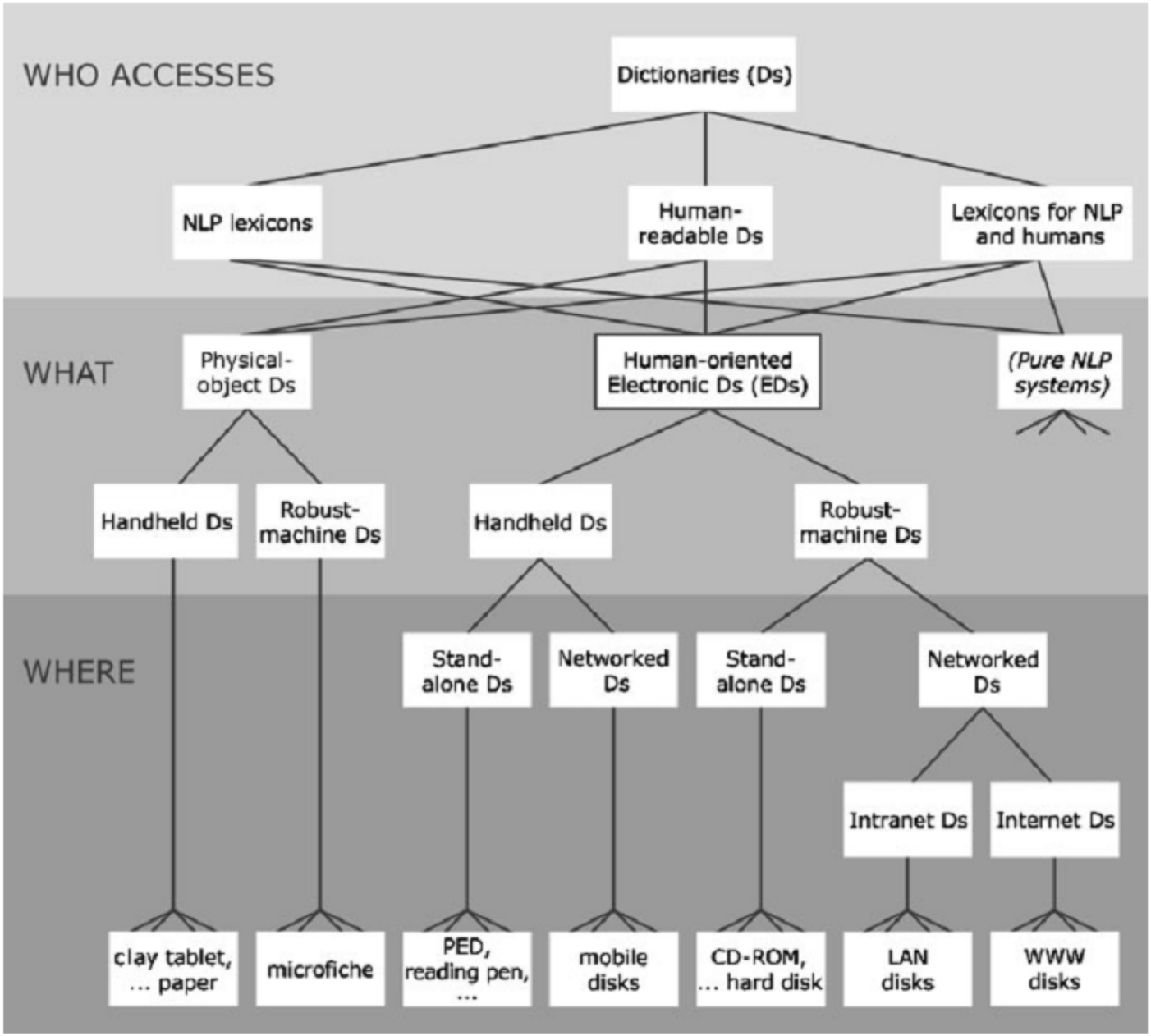
Nesi's typology

Four types of Eds for language learning

#	*Type?*	*Source?*	*Who?*	*Profit?*
1	Internet dictionary	(outdated) copyright-free material & users' contributions	[Netizens]	—
2	glossary for online courseware	[new material]	language-department staff members at universities	—
3	learners' dictionary on CD-ROM	reputable hardcopy reference books	major dictionary publishing houses	✓
4	PED	[no-named (hardcopy) source]	makers of electrical goods	✓

Schryver's three-step typology

- 1 step: "WHO accesses the dictionary?" – machines/humans
- 2 step: "WHAT is accessed?" – dictionary medium (physical-object/ electronic medium). Both media can be subdivided into handheld devices/ robust machines
- 3 step: "WHERE does one access the dictionary data?" – the type of storage


WHO ACCESSES
Dictionaries (Ds)
NLP lexicons
Human-readable Ds
Lexicons for NLP and humans
WHAT
Physical-object Ds
Human-oriented Electronic Ds (EDs)
(Pure NLP systems)
Handheld Ds
Robust-machine Ds
Handheld Ds
Robust-machine Ds
WHERE
Stand-alone Ds
Networked Ds
Stand-alone Ds
Networked Ds
Intranet Ds
Internet Ds
clay tablet, ... paper
microfiche
PED, reading pen, ...
mobile disks
CD-ROM, ... hard disk
LAN disks
WWW disks

Paper Dictionaries versus Electronic Dictionaries

'It is my view that the advantages of the electronic dictionary and the familiarity of today's young people with electronic devices will eventually relegate the printed notion of "dictionary" to a secondary sense.' (Sharpe)

Today's average paper and electronic-dictionary reality

	Electronic dictionary (ED)			
	Dictionary on a stand-alone computer		*Dictionary on a networked computer*	
Traditional paper dictionary [PAPER]	*Handheld dictionary (e.g. PED) [PED]*	*Robust-machine dictionary (e.g. CD-ROM) [CD]*	*Intranet dictionary [INTRA]*	*Internet dictionary [INTER]*
one user uses a handheld book to access a D stored on paper	one user uses a palmtop to access a D stored on a small disk	one user uses a laptop/desktop to access a D stored on a large disk	a group of users use laptops/desktops to access a D stored on a local mainframe	users worldwide use laptops/desktops to access a D stored on an online server

Paper Dictionary

1. familiar, reassuring

2. symbolic value as a physical object that can be owned and admired

3. easy to browse, can most readily be read recreationally, easy global reading, manhandling is part of the reading pleasure

4. easy to read, best for the eyes

Paper Dictionary

5. easy to annotate, one can physically write on them
6. durable, can be carried around the world without fear of serious damage or loss of functionality
7. has a solid independent existence (i.e. is not plugged into anything and nothing is plugged into it)
8. does not require a computer to be switched on

Handheld

1. can be used straight after acquisition
2. can be used anywhere, not site-dependent

Handheld

3. portable, small size, low weight
4. offline access
5. gadgets/status symbols

Local Disk

1. availability of audible pronunciation (no need to learn IPA) and sound files
2. take very little space and have an extremely low weight
3. record-yourself facility (i.e. comparison of one's own pronunciation with the stored one(s))

Local Disk

4. speedy access to D data

5. alternative ways of presenting information (computer graphics)

6. fuzzy search facility, multi-access, range of look-up routes, hyper reference

Local Disk

7. (large-scale)user customisation; interactivity
8. highly user-friendly interface
9. copy-and-paste facility

Electronic

1. charm of novelty
2. paper-less office, ecologically sound
3. users are liberated from alphabetical order

Electronic

4. elimination of linear text restrictions; not everything needs to be written/visual and constant

5. optimisation of cross-referencing

Online

1. no space constraints other than the need to avoid swamping the user, huge quantities of data
2. rapid access to large amounts of lexicographical evidence in corpora
3. new types of information

Online

4. video sequences, animation

5. links with (other) software (e.g. built-in teaching/learning, games, etc.)

6. up-to-date; dynamic repository of knowledge

Online

7. one-stop consultation (i.e. simultaneous searches of hundreds of native speaker and bilingual Ds)
8. consultation cost based solely on the actual use
9. cheap if not free