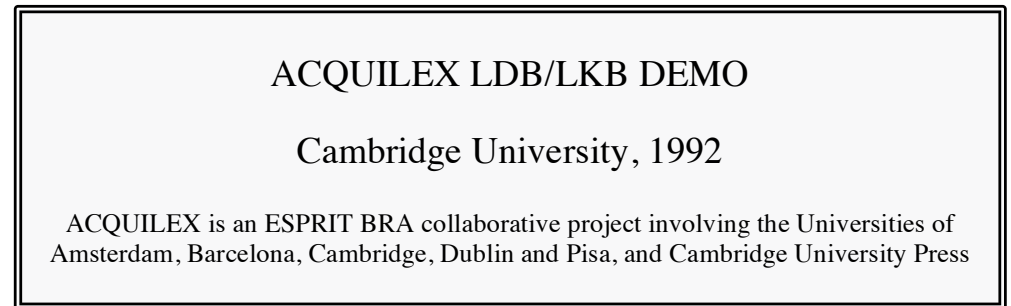


Fully Open Source LKB

John Carroll
University of Sussex

The LKB dates from around 1991

Has run in several Common Lisps:
Procyon CL, Macintosh CL, CLISP,
CMUCL, Allegro CL, SBCL, Clozure CL



First ported to SBCL by Ben Waldron 2003–6 (while enhancing lexical processing)

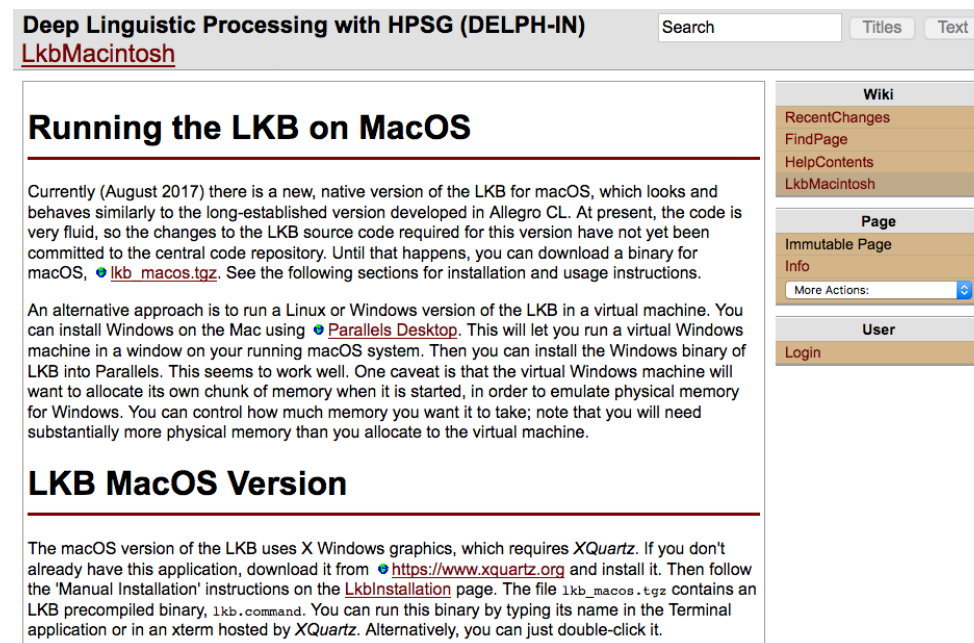
But:

- most recent development has been in Allegro CL on Linux
- there has never been an open source version of LKB with native graphics

Goals for this new version:

- usability
- efficiency
- multilingual support
- fully open source (i.e. supporting libraries are open source)
- running on macOS, and eventually other platforms

A macOS binary released last week – see <http://moin.delph-in.net/LkbMacintosh>



The screenshot shows a MoinMoin wiki page with the following content:

Deep Linguistic Processing with HPSG (DELPH-IN)

[LkbMacintosh](#)

Running the LKB on MacOS

Currently (August 2017) there is a new, native version of the LKB for macOS, which looks and behaves similarly to the long-established version developed in Allegro CL. At present, the code is very fluid, so the changes to the LKB source code required for this version have not yet been committed to the central code repository. Until that happens, you can download a binary for macOS, [lkb_macos.tgz](#). See the following sections for installation and usage instructions.

An alternative approach is to run a Linux or Windows version of the LKB in a virtual machine. You can install Windows on the Mac using [Parallels Desktop](#). This will let you run a virtual Windows machine in a window on your running macOS system. Then you can install the Windows binary of LKB into Parallels. This seems to work well. One caveat is that the virtual Windows machine will want to allocate its own chunk of memory when it is started, in order to emulate physical memory for Windows. You can control how much memory you want it to take; note that you will need substantially more physical memory than you allocate to the virtual machine.

LKB MacOS Version

The macOS version of the LKB uses X Windows graphics, which requires *XQuartz*. If you don't already have this application, download it from <https://www.xquartz.org> and install it. Then follow the 'Manual Installation' instructions on the [LkbInstallation](#) page. The file `lkb_macos.tgz` contains an LKB precompiled binary, `lkb.command`. You can run this binary by typing its name in the Terminal application or in an xterm hosted by *XQuartz*. Alternatively, you can just double-click it.

Wiki

- RecentChanges
- FindPage
- HelpContents
- LkbMacintosh

Page

- Immutable Page
- Info
- More Actions:

User

- Login

Script file?

PLACES

- ~johnca
- erg
- lkb

DEVICES

- G-Drive
- UNTITLED

Parent directory

- checkpaths.items
- checkpaths.lisp
- convert-wcn.lisp
- globals.lisp
- mmsglobals.lisp
- mt.lisp
- nogen-lex.set
- nogen-rules.set
- patches.lisp
- sample.mrs
- script
- settings.lisp
- user-fns.lisp
- user-prefs.lisp

Name: /Users/johnca/Documents/delphin/erg/lkb/script

OK Cancel

read-repp(): reading file 'asci.rpp'.
 read-repp(): reading file 'wiki.rpp'.
 read-repp(): reading file 'gm1.rpp'.
 read-repp(): reading file 'robustness.rpp'.
 read-repp(): reading file 'quotes.rpp'.
 read-repp(): reading file 'lkb.rpp'.
 read-repp(): reading file 'tokenizer.rpp'.
 read-vpm(): reading file 'semi.vpm'.
 read-vpm(): reading file 'abstract.vpm'.
 .Loading #P"/Users/johnca/Documents/delphin/erg/lkb/paraphraser.mtr".
 read-transfer-rules(): reading file 'paraphraser.mtr'.
 read-transfer-rules(): reading file 'idioms.mtr'.
 read-transfer-rules(): reading file 'trigger.mtr'.
 read-transfer-rules(): reading file 'generation.mtr'.
 Building rule filter
 Building lr connections table
 Constructing lr table for non-morphological rules
 Grammar input complete

Close Previous Next Reject Clear Reset Rec

[0] Abrams hired two competent programmers.

[0] {e3:
 _1:proper_q<0:6>[BV x5]
 x5:named<0:6>{"Abrams"}{x PERS 3, NUM sg, IND +}
 e3:_hire_v_1<7:12>{e SF prop, TENSE past, MOOD indicative
 _2:udef_q<13:16>[BV x9]
 e14:card<13:16>{"2"}{e SF prop, TENSE untensed, MOOD ir
 e15:_competent_a_1<17:26>{e SF prop, TENSE untensed, M
 x9:_programmer_n_of<27:39>{x PERS 3, NUM pl, IND +}
 }

ARG0: e3
 ARG1: x5
 ARG2: x9 [x PERS: 3 NUM: PL IND: +]
 [udef_q_rel<13:16>
 LBL: h10
 ARG0: x9
 RSTR: h11
 BODY: h12]
 [card_rel<13:16>
 LBL: h13
 ARG0: e14 [e SF: PROP TENSE: UNTENSED MOOD: INDICATIVE]
 ARG1: x9
 CARG: "2"]
 ["_competent_a_1_rel"<17:26>
 LBL: h13

Current Interaction

Sentence アブラムが二匹のプログラマーを雇った。

OK Cancel

Close Close All Print Show chart Compare

Parse Tree for "アブラムが二匹のプログラマーを雇った。"

Close Close All Print

XP
 |
 VP
 / \
 VP PP
 / \ / \
 V NP AP
 / \ / \
 V NP ADV AP
 アブラムが 二匹の プログラマーを 雇った。

Parse Trees (3) for "猫が好きな子はいない。"

Close Close All Print Show chart Compare

Close Close All Print

Parse Tree for "猫が好きな子はいない。"

Close Close All Print

UTT
 |
 VP
 / \
 PP VP
 / \ / \
 N CASE P ADJ V
 / \ / \
 N N V
 猫 が 好き な 子 は ない。

Quit Load View Parse Debug Options
 read-repp(): reading file 'asci.rpp'.
 read-transfer-rules(): reading file 'trigger.mtr'.
 read-transfer-rules(): reading file 'paraphraser.mtr'.
 read-transfer-rules(): reading file 'idioms.mtr'.
 Building rule filter
 Building lr connections table
 Constructing lr table for non-morphological rules
 Grammar input complete

'Hike' corpus subset (287 sentences), ERG 10342, Intel Xeon X5460 3.16Ghz, packing, exhaustive unpacking – figures from Slayden (2012) Ch 5

	t_{min} (sec.)	t_{max} (sec.)	t_{total} (m:ss)
PET	0.007	8.4	1:47
<i>agree</i>	0.008	7.7	3:04

Similar 287-sentence 'Hike' corpus subset, ERG 1214, Intel Core i5-2400S 2.5GHz, packing, exhaustive unpacking

	t_{min} (sec.)	t_{max} (sec.)	t_{total} (m:ss)
ACE			1:35
LKB _{<i>Clozure CL</i>}	0.018	17.7	5:43
LKB _{<i>SBCL</i>}	0.009	13.9	3:39

Planned future development:

- multilingual input (keyboard layouts, input methods)
- more flexible font handling
- mouse click/select in editable text fields
- macOS Aqua appearance (via new McCLIM 'Beagle' back-end)
- improved robustness against unanticipated errors
- versions for Linux and Windows

Any other requests?