LING 581: Advanced Computational Linguistics

Lecture Notes
March 20th
Today's Topics

• EVALB Graph
• WordNet
Homework 7 Review

• Thanks for the PTB WSJ EVALB graphs so far...
• Don't forget to run data points and submit yours as Homework 7.

22 minutes for Section 23 (2241 sentences)
A HP workstation
Two Intel Xeon CPUs
E5-2687W @ 3.10GHz
16 cores used
split –l 25 used
using GNU parallel
# Homework 7 Review

```bash
#!/bin/bash
# assumes gnu parallel has been installed
# assumes bash must be invoked with --noprofile
# assumes bash includes 'eval' which correctly handles '}'
# assumes bash without [...] (braces add to positional parameters)
# assumes dir scratch contains the pre-split 40wsj
# assumes no extraneous ptb/40wsj_23-X.parsed files
# rm scratch/40wsj_23-*.parsed safe;
# 40wsj_23-$SECS.parsed stored in dir above

date
SCRATCH=scratch-25
SECS=1200520110109171618008060307141302150419
for ((i=2; i<=$SECS; i+=2));
do	rm -f $SCRATCH/40wsj_23-*.parsed
echo -ne "ca, cu, cg, br, co, bx, ncm, dg, dc, aj, ax, cv\nab, dl, bo, at, cc, a, inal, dj, bh, az, ba, bj, nar, bx, bd, cb, bl, bv, ndh, ac, cz, cn, bg, bb, ndk, c, e, naf, bt, ah, di, ao, bu, ncy, aq, bs, cp, ch, cd\nag, df, bi, bo, a, v, bm, cy, cr, da, bk, be, bw, nk, by, ci, bc, db, cf, a, np, c, j, ca, ad, au, ak, ba, nct, as, cw, aq, dd, ae\ncl, de, om, cx, an, aw, ap, nb, f\n" | parallel --tag --line-buffer ./run-chunk.sh ${{SECS:0:$i}} $SCRATCH

cat $SCRATCH/40wsj_23-*.parsed > 40wsj_23-${{SECS:0:$i}}.parsed
date
```
Homework 7 Review

- `split -l 100`
- `split -l 50`
- `split -l 25`
Homework 7 Review

- `split -l 50` job size
- `split -l 25` job size
Homework 7 Review

- my EVALB results ..
Today’s Topic

• WordNet 3.0
  • (3.1 the latest version but only online or the database files only)
  • [http://wordnetweb.princeton.edu/perl/webwn](http://wordnetweb.princeton.edu/perl/webwn)
  • **Homework**: do the installations and use the programs in this lecture...
WordNet 3.0

- [https://wordnet.princeton.edu](https://wordnet.princeton.edu)
NLTK and WordNet

http://www.nltk.org/howto/wordnet.html

```python
>>> from nltk.corpus import wordnet as wn

>>> wn.synsets('cat')
[Synset('cat.n.01'),
 Synset('guy.n.01'), Synset('cat.n.03'),
 Synset('kat.n.01'), Synset('cat-o-nine-tails.n.01'),
 Synset('caterpillar.n.02'),
 Synset('big_cat.n.01'),
 Synset('computerized_tomography.n.01'),
 Synset('cat.v.01')]

>>> s = wn.synsets('cat')

>>> s[6]
Synset('big_cat.n.01')

>>> s[6].lemma_names()
['big_cat', 'cat']

>>> s[6].lemma_names('fra')
['chat', 'fauve', 'félin']

>>> s[6].hypernyms()
[Synset('feline.n.01')]

>>> s[6].hypernyms()[0].hypernyms()
[Synset('carnivore.n.01')]

>>> s[6].hypernyms()[0].hypernyms()[0].hy
[Synset('placental.n.01')]```
WordNet 3.0

• Download: https://wordnet.princeton.edu/download/current-version

**WordNet 2.1 for Windows**

WordNet browser, command-line tool, and database files with InstallShield self-extracting installer:

Download: [WordNet-2.1.exe](https://wordnet.princeton.edu/download/current-version)

**WordNet 3.0 for UNIX-like systems (including: Linux, Mac OS X, Solaris)**

**Prolog version of WordNet 3.0**

ANSI Prolog version of the WordNet database.

Download: [WNprolog-3.0.tar.gz](https://wordnet.princeton.edu/download/current-version)
WordNet 3.0

• Steps
  • Download.. from website

  [Image of file system with folders and files]

• README
  • Beginning with Version 2.1, we changed the Unix package to a GNU Autotools package.
  • The WordNet browser makes use of the open source Tcl and Tk packages. Tcl and Tk must be installed BEFORE you compile WordNet.
  • You must also have a C compiler before installing Tcl/Tk or WordNet. WordNet has been built and tested with the GNU gcc compiler.

(Tcl = tool control language)
(Tk = GUI toolkit)
WordNet 3.0

• Steps
  • GNU Autoconf
  • configure
    cd Downloads/WordNet-3.0
    ./configure
    • checking for gcc... gcc
    • config.status: creating Makefile
    • checking for Tcl configuration... configure: WARNING: Can't find Tcl configuration definitions
  • INSTALL
    If you're running OS X and installed the Aqua Tcl/Tk package from the web site above, use the following settings:
      --with-tcl=/System/Library/Frameworks/Tcl.framework
      --with-tk=/System/Library/Frameworks/Tk.framework
    need to have Xcode installed on Mac

OSX 10.9

make /usr/bin/make
WordNet 3.0 on MacOS

dhcp-18-142-168-95:Frameworks sandiway$ pwd
/System/Library/Frameworks
dhcp-18-142-168-95:Frameworks sandiway$ ls
AGL.framework
AVFoundation.framework
AVKit.framework
Accelerate.framework
Accounts.framework
AddressBook.framework
AppKit.framework
AppKitScripting.framework
AppleScriptKit.framework
AppleScriptObjC.framework
ApplicationServices.framework
AudioToolbox.framework
AudioUnit.framework
AudioVideoBridging.framework
Automator.framework
CFNetwork.framework
Calendar.framework
Carbon.framework
CloudKit.framework
Cocoa.framework
Collaboration.framework
CoreAudio.framework
CoreAudioKit.framework
CoreBluetooth.framework
CoreData.framework
CoreFoundation.framework
CoreGraphics.framework
CoreImage.framework
CoreLocation.framework
CoreMIDI.framework
CoreMIDIServer.framework
CoreML.framework
CoreSurface.framework
CoreMedia.framework
CoreMediaIO.framework
CoreServices.framework
CoreSpotlight.framework
CoreTelephony.framework
CoreText.framework
CoreVideo.framework
CoreWLAN.framework
CryptoTokenKit.framework
DComponentGlue.framework
DVPlayback.framework
DirectoryService.framework
DiscRecording.framework
DiskArbitration.framework
DiskArbitration.framework
DrawSprocket.framework
EventKit.framework
ExceptionHandling.framework
ExternalAccessory.framework
FWAUX unserialize.framework
FinderSync.framework
ForceFeedback.framework
Foundation.framework
GLKit.framework
GLUT.framework
GSS.framework
GameController.framework
GameKit.framework
GameplayKit.framework
GpuVid.framework
ICADevices.framework
IMServicePlugIn.framework
IIOBluetooth.framework
IByteBufferU1.framework
IOWKit.framework
ImageCaptureCore.framework
ImageIO.framework
InputMethodKit.framework
InstallerPlugins.framework
InstantMessage.framework
Intents.framework
JavaFrameEmbedding.framework
JavaFrameCore.framework
JavaVM.framework
Kernel.framework
Keperbus.framework
KernLib.framework
LDAP.framework
LDAPFramework.framework
LocalAuthentication.framework
MapKit.framework
MediaAccessibility.framework
MediaLibrary.framework
MediaPlayer.framework
MediaToolbox.framework
Message.framework
Metal.framework
MetalKit.framework
MetalKit.framework
MetalPerformanceShaders.framework
ModelIO.framework
MultipeerConnectivity.framework
NetFS.framework
NetworkExtension.framework
NotificationCenter.framework
OSAKit.framework
OpenAL.framework
OpenCL.framework
OpenDirectory.framework
OpenGL.framework
PCSC.framework
Photos.framework
PhotosUI.framework
PreferencePanels.framework
PubSub.framework
Python.framework
QTKit.framework
Quartz.framework
QuartzCore.framework
QuickLook.framework
QuickTime.framework
Ruby.framework
SafariServices.framework
SceneKit.framework
ScreenSaver.framework
Scripting.framework
ScriptingBridge.framework
Security.framework
SecurityFoundation.framework
SecurityInterface.framework
ServiceManagement.framework
Social.framework
SpriteKit.framework
StoreKit.framework
SyncServices.framework
System.framework
SystemConfiguration.framework
MAIN.framework
Tcl.framework
Tk.framework
VideoCore4Deceleration.framework
VideoToolbox.framework
Vision.framework
WebKit.framework
module.map
vdpLib.framework
vmnet.framework
WordNet 3.0

- **GNU Autoconf**

  ```
  ./configure -with-
tcl=/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/System/Library/Frameworks/Tcl.framework -with-
tk=/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/System/Library/Frameworks/Tk.framework/
  
  checking for gcc... gcc
  ...
  checking for Tcl configuration... found
  /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/System/Library/Frameworks/Tcl.framework/tclConfig.sh
  
  checking for Tk configuration... found
  /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/System/Library/Frameworks/Tk.framework/tkConfig.sh
  
  checking for existence of
  /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/System/Library/Frameworks/Tcl.framework/tclConfig.sh... loading
  
  checking for existence of
  /Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/System/Library/Frameworks/Tk.framework/tkConfig.sh... loading
  
  configure: creating .config.status
  config.status: creating Makefile
  ```
WordNet 3.0

WordNet is now configured

Installation directory: /usr/local/WordNet-3.0

To build and install WordNet:

    make
    make install

To run, environment variables should be set as follows:

    PATH - include ${exec_prefix}/bin
    WNHOME - if not using default installation location, set to /usr/local/WordNet-3.0

See INSTALL file for details and additional environment variables which may need to be set on your system.
WordNet 3.0

• make

```
In file included from tkAppInit.c:16:
/Applications/Xcode.app/Contents/Developer/Platforms/MacOSX.platform/Developer/SDKs/MacOSX10.9.sdk/usr/include/tk.h:78:11: fatal error: 'X11/Xlib.h' file not found
  #include <X11/Xlib.h>

1 error generated.
```

recall: from your EVALB compilation a .h file means a C compiler header file
X11 is now under /opt/X11, include files are in /opt/X11/include
WordNet 3.0

• configure
  ./configure --with-
  tcl=/System/Library/Frameworks/Tcl.framework/ --with-
  tk=/System/Library/Frameworks/Tk.framework/ CFLAGS=-
  I/opt/X11/include
• make
  gcc -I/opt/X11/include -o wishwn wishwn-tkAppInit.o
  wishwn-stubs.o -L../lib -lWN -F/System/Library/Frameworks -
  framework Tk -F/System/Library/Frameworks -framework Tcl -
  lpthread -framework CoreFoundation -framework Cocoa -
  framework Carbon -framework IOKit -lpthread -framework
  CoreFoundation
• See also
  • https://stackoverflow.com/questions/23658393/installing-wordnet-on-mac-10-9-2
WordNet 3.0

• On Macs, make sure directory /opt/X11 exists already.
• If not, obviously CFLAGS=-I/opt/X11/include won't work
• Install XQuartz from https://www.xquartz.org
WordNet 3.0

• **sudo make install**

```
…
Making install in src
test -z "/usr/local/WordNet-3.0/bin" ||
/Users/sandiway/Downloads/WordNet-3.0/install-sh -d
"/usr/local/WordNet-3.0/bin"
   /usr/bin/install -c 'wn' '/usr/local/WordNet-3.0/bin/wn'
   /usr/bin/install -c 'wishwn' '/usr/local/WordNet-3.0/bin/wishwn'
test -z "/usr/local/WordNet-3.0/bin" ||
/Users/sandiway/Downloads/WordNet-3.0/install-sh -d
"/usr/local/WordNet-3.0/bin"
   /usr/bin/install -c 'wnb' '/usr/local/WordNet-3.0/bin/wnb'
```

• Running the WordNet browser:
```
/usr/local/WordNet-3.0/bin/wnb
/usr/local/WordNet-3.0/bin/wnb: line 3: wishwn: command not found
```
WordNet 3.0

- PATH to wnb (WordNet browser)
  ```
  export PATH=/usr/local/WordNet-3.0/bin:$PATH
  which wnb
  /usr/local/WordNet-3.0/bin/wnb
  ```
- wnb
  ![WordNet 3.0 Browser](image)

Put PATH modification in your startup shell script, e.g. `.profile` `.login` `.bash_profile`

wnb requires packages:
- gcc
- make
- configure (GNU autoconf)
- TCL/TK

The noun hello has 1 sense (first 1 from tagged texts)

1. (1) **hello**, hullo, hi, howdy, how-do-you-do -- (an expression of greeting; "every morning they exchanged polite hellos")
WordNet 3.1 vs 3.0
Perl Interface to WordNet 3.0

• http://www.cpan.org/

look for WordNet QueryData
Perl Interface to WordNet 3.0

http://search.cpan.org/~jrennie/WordNet-QueryData-1.49/QueryData.pm
Perl Interface to WordNet 3.0

• Use the cpanm command or manually (see next slides)

dhcp-10-142-168-95:5.18 sandiway$ sudo cpanm WordNet::QueryData

--> Working on WordNet::QueryData

Fetching http://www.cpan.org/authors/id/J/JR/JRENNIE/WordNet-QueryData-1.49.tar.gz ... OK

Configuring WordNet-QueryData-1.49 ... OK

Building and testing WordNet-QueryData-1.49 ... OK

Successfully installed WordNet-QueryData-1.49

1 distribution installed
Perl Interface to WordNet 3.0
Perl Interface to WordNet 3.0

```
cd WordNet-QueryData-1.49
perl Makefile.PL
  • Checking if your kit is complete...
  • Looks good
  • Writing Makefile for WordNet::QueryData
make
  • cp QueryData.pm blib/lib/WordNet/QueryData.pm
  • Manifying blib/man3/WordNet::QueryData.3pm
make test
  PERL_DL_NONLAZY=1 /usr/bin/perl "-Iblib/lib" "-Iblib/arch" test.pl
  ok 1
  ok 2
  ok 3
  ok 4
  ok 5
  ...
  ok 104
  ok 105
  ok 106

sudo make install
Installing /Library/Perl/5.18/WordNet/QueryData.pm
Installing /usr/local/share/man/man3/WordNet::QueryData.3pm
Appending installation info to /Library/Perl/Updates/5.16.2/darwin-thread-multi-2level/perllocal.pod
```
Perl Interface to WordNet 3.0

NAME

WordNet::QueryData - direct perl interface to WordNet database

SYNOPSIS

use WordNet::QueryData;

my $wn = WordNet::QueryData->new( noload => 1);

print "Synset: ", join("", ", $wn->querySense("cat#n#7", "syns")), "\n";
print "Hyponyms: ", join("", ", $wn->querySense("cat#n#1", "hypo")), "\n";
print "Parts of Speech: ", join("", ", $wn->querySense("run")), "\n";
print "Senses: ", join("", ", $wn->querySense("run#v")), "\n";
print "Forms: ", join("", ", $wn->validForms("lay down#v")), "\n";
print "Noun count: ", scalar($wn->listAllWords("noun")), "\n";
print "Antonyms: ", join("", ", $wn->queryWord("dark#n#1", "ants")), "\n";
Perl Interface to WordNet 3.0

perl wnqdata.perl
print "Synset: ", join("", ",");

• Synset: big_cat#n#1, cat#n#7

print "Hyponyms: ", join("", ",");

• Hyponyms: domestic_cat#n#1, wildcat#n#3

print "Parts of Speech: ", join("", ",");

• Parts of Speech: run#n, run#v

print "Senses: ", join("", ",");

• run#v#1, run#v#2, run#v#3, run#v#4, run#v#5, run#v#6, run#v#7, run#v#8, run#v#9, run#v#10, run#v#11, run#v#12, run#v#13, run#v#14, run#v#15, run#v#16, run#v#17, run#v#18, run#v#19, run#v#20, run#v#21, run#v#22, run#v#23, run#v#24, run#v#25, run#v#26, run#v#27, run#v#28, run#v#29, run#v#30, run#v#31, run#v#32, run#v#33, run#v#34, run#v#35, run#v#36, run#v#37, run#v#38, run#v#39, run#v#40, run#v#41
Perl Interface to WordNet 3.0

perl wnqdata.perl
print "Forms: ", join("", ", $wn->validForms("lay down#v")), "\n";
• Forms: lay_down#v, lie_down#v

print "Noun count: ", scalar($wn->listAllWords("noun")), "\n";
• Noun count: 117798

print "Antonyms: ", join("", ", $wn->queryWord("dark#n#1", "ants")), "\n";
• Antonyms: light#n#9
wnb

• WordNet browser:

code written in tcl/tk, runs under wish
wnb

- Setup:
  - export PATH=/usr/local/WordNet-3.0/bin:$PATH
  - wnb
  - Options: see sense numbers *(we’ll need these later)*
• Hypernyms (going up the hierarchy):

<table>
<thead>
<tr>
<th>8 senses of cat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense 1</td>
</tr>
<tr>
<td>cat#1, true cat#1</td>
</tr>
<tr>
<td>=&gt; feline#1, felid#1</td>
</tr>
<tr>
<td>=&gt; carnivore#1</td>
</tr>
<tr>
<td>=&gt; placental#1, placental mammal#1, eutherian#1, eutherian mammal#1</td>
</tr>
<tr>
<td>=&gt; mammal#1, mammalian#1</td>
</tr>
<tr>
<td>=&gt; vertebrate#1, craniate#1</td>
</tr>
<tr>
<td>=&gt; chordate#1</td>
</tr>
<tr>
<td>=&gt; animal#1, animate being#1, beast#1, brute#2, creature#1, fauna#2</td>
</tr>
<tr>
<td>=&gt; organism#1, being#2</td>
</tr>
<tr>
<td>=&gt; living thing#1, animate thing#1</td>
</tr>
<tr>
<td>=&gt; whole#2, unit#6</td>
</tr>
<tr>
<td>=&gt; object#1, physical object#1</td>
</tr>
<tr>
<td>=&gt; physical entity#1</td>
</tr>
<tr>
<td>=&gt; entity#1</td>
</tr>
<tr>
<td>Sense 2</td>
</tr>
<tr>
<td>guy#1, cat#2, hombre#1, bozo#2</td>
</tr>
<tr>
<td>=&gt; man#1, adult male#1</td>
</tr>
<tr>
<td>=&gt; male#2, male person#1</td>
</tr>
<tr>
<td>=&gt; person#1, individual#1, someone#1, somebody#1, mortal#1, soul#2</td>
</tr>
<tr>
<td>=&gt; organism#1, being#2</td>
</tr>
</tbody>
</table>
Hyponyms (going down the hierarchy):

3 of 8 senses of cat
Sense 1
cat#1, true cat#1
  =&gt; domestic cat#1, house cat#1, Felis domesticus#1, Felis catus#1
  =&gt; wildcat#3
Sense 2
guy#1, cat#2, hombre#1, bozo#2
  =&gt; sod#4
Sense 7
big cat#1, cat#7
  =&gt; leopard#2, Panthera pardus#1
  =&gt; snow leopard#1, ounce#3, Panthera uncia#1
  =&gt; jaguar#1, panther#1, Panthera onca#1, Felis onca#1
  =&gt; lion#1, king of beasts#1, Panthera leo#1
  =&gt; tiger#2, Panthera tigris#1
  =&gt; liger#1
  =&gt; tiglon#1, tigon#1
  =&gt; cheetah#1, chetah#1, Acinonyx jubatus#1
  =&gt; saber-toothed tiger#1, sabertooth#1
wnb

• Holonyms (part-of hierarchy):

1 of 8 senses of cat

Sense 7
big cat#1, cat#7

MEMBER OF: Felidae#1, family Felidae#1
MEMBER OF: Carnivora#1, order Carnivora#1
MEMBER OF: Eutheria#1, subclass Eutheria#1
MEMBER OF: Mammalia#1, class Mammalia#1
MEMBER OF: Vertebrata#1, subphylum Vertebrata#1, Craniata#1, subphylum
Craniata#1
MEMBER OF: Chordata#1, phylum Chordata#1
MEMBER OF: Animalia#1, kingdom Animalia#1, animal kingdom#1
• Meronyms (has parts, plus inherited):

Sense 1
  cat#1, true cat#1
  => feline#1, felid#1
  HAS PART: paw#1
       HAS PART: pad#7
  => carnivore#1
       => placental#1, placental mammal#1, eutherian#1, eutherian mammal#1
       => mammal#1, mammalian#1
       HAS PART: coat#3, pelage#1
       HAS PART: hair#4, pilus#1
       => vertebrate#1, craniate#1
       HAS PART: belly#5
       HAS PART: tail#1
           HAS PART: dock#6
       HAS PART: caudal appendage#1
       HAS PART: rib#2, costa#2
           HAS PART: costal cartilage#1
       HAS PART: thorax#2, chest#1, pectus#1
       HAS PART: sternum#1, breastbone#1
           HAS PART: gladiolus#2, corpus sternum#1
       HAS PART: manubrium#1
       HAS PART: xiphoid process#1
• Meronyms (has parts, plus inherited):
  5 senses of car

  Sense 1
car#1, auto#1, automobile#1, machine#6, motorcar#1
    HAS PART: accelerator#1, accelerator pedal#1, gas pedal#1, gas#5, throttle#2, gun#6
    HAS PART: air bag#1
    HAS PART: auto accessory#1
    HAS PART: automobile engine#1
      HAS PART: exhaust#2, exhaust system#1
        HAS PART: exhaust manifold#1
        HAS PART: exhaust pipe#1
        HAS PART: exhaust valve#1
        HAS PART: silencer#2, muffler#1
        HAS PART: tailpipe#1
    HAS PART: automobile horn#1, car horn#1, motor horn#1, horn#11, hooter#2
      HAS PART: horn button#1
    HAS PART: buffer#6, fender#4
    HAS PART: bumper#2
      HAS PART: bumper guard#1
    HAS PART: car door#1
      HAS PART: armrest#1
      HAS PART: doorknob#1
    HAS PART: hinge#1, flexible joint#1
      HAS PART: pindle#1
wnb

• Derivationally related (different part-of-speech):

<table>
<thead>
<tr>
<th>Sense 3</th>
<th>cat#3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELATED TO- &gt;(adj) catty#1#1</td>
<td></td>
</tr>
<tr>
<td>=&gt; bitchy#1, catty#1, cattish#1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sense 5</th>
<th>cat-o'-nine-tails#1, cat#5</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELATED TO- &gt;(verb) cat#1#1</td>
<td></td>
</tr>
<tr>
<td>=&gt; cat#1</td>
<td></td>
</tr>
</tbody>
</table>
wnb

• Domain:

Sense 6
Caterpillar#2, cat#6
  USAGE->(noun) slang#2, cant#3, jargon#1, lingo#1, argot#1, patois#1, vernacular#1
  USAGE->(noun) trademark#2

Sense 1
cat#1, auto#1, automobile#1, machine#6, motorcar#1
  TOPIC TERM->(adj) hopped-up#1
  TOPIC TERM->(noun) rental#2, renting#1
  TOPIC TERM->(noun) alternator#1
  TOPIC TERM->(noun) backseat#2
  TOPIC TERM->(noun) road map#2
  TOPIC TERM->(noun) showroom#1, salesroom#1, saleroom#1
  TOPIC TERM->(noun) spark lever#1
  TOPIC TERM->(noun) tunnel#1
  TOPIC TERM->(noun) passenger#1, rider#4
  TOPIC TERM->(noun) grip#4, traction#1, adhesive friction#1
  TOPIC TERM->(noun) chattel#1, personal chattel#1, movable#1
  TOPIC TERM->(verb) prang#1
Verbs

The verb destroy has 4 senses (first 3 from tagged texts)

1. (42) **destroy#1**, destruct#2 -- (do away with, cause the destruction or undoing of; "The fire destroyed the house")
2. (28) **destroy#2**, ruin#1 -- (destroy completely; damage irreparably; "You have ruined my car by pouring sugar in the tank!"; "The tears ruined her make-up")
3. (2) demolish#3, **destroy#3** -- (defeat soundly; "The home team demolished the visitors")
4. **destroy#4**, put down#6 -- (put (an animal) to death; "The customs agents destroyed the dog that was found to be rabid"; "the sick cat had to be put down")