

# omw\_with\_nltk

November 19, 2020

```
In [1]: import pandas as pd
import nltk
#nltk.download('omw')
from nltk.corpus import wordnet as wn
from itertools import chain
import sys

In [2]: def hypernym_chain(s):
    "calculates the whole hypernym chain for a synset (and its hypernyms) as a list"
    "s: hypernyms() of a synset"
    second = s[0].hypernyms()
    y = []
    chain = []
    ls = len(second)
    if ls >= 1:
        t = s[0].hypernyms()
        y += hypernym_chain(t)
        chain = t+y
        return chain
    else: return chain

In [3]: # read in mapping data
data = pd.read_table('wn30map31.txt', delimiter='\t', skiprows = 7)
mapp = pd.DataFrame(data)

# convert columns to lists
wn31 = mapp['WordNet 3.1'].tolist()
wn3 = mapp['WordNet 3.0'].tolist()

wn31 = [str(x).zfill(8) for x in wn31]
wn3 = [str(x).zfill(8) for x in wn3]

# read in cili (source: https://lr.soh.ntu.edu.sg/omw/ili)
cili = pd.read_table('cili.tsv')
cili = pd.DataFrame(cili)

iliId = cili['ili_id'].tolist()
```

```

iliDef = cili['definition'].tolist()

# map two columns of a list
def f(a,b,c):
    return c[b.index(a)]

In [4]: def ciliFromDefinition(chainDef):
        if chainDef in iliDef:
            print('ili-ID: ',f(chainDef,iliDef,iliId))
        else: print('ili-ID: Not in list')

In [5]: def offsetFromSynset(chain):
        "returns the offset-IDs for a chain of Synset as a list"
        #lchain = len(chain)
        #for i in range(lchain):
        hyperOffsets = []
        hyperOffsets = str(chain.offset()).zfill(8)
        print('Offset-ID(3.0): ',hyperOffsets)
        print('Offset-ID(3.1): ',f(hyperOffsets,wn3,wn31))
        return hyperOffsets

In [6]: def key_chain(lem):
        "computes all sense-keys for all lemmata in a list"
        "lem: lemmas() of a synset"
        keys = []
        if lem is not None:
            for index in range(len(lem)):
                if lem[index].key() is not None:
                    keys = lem[index].key()
                    print('Keys: ',keys)
                else: print('Keys: None')
            return keys

In [7]: def info_chain(chain, l='eng'):
        "computes all lemmata, their keys and offset-IDs for each level of a hypernym_chain"
        "chain: a hypernym_chain()"
        "l: an omw language"
        for index in range(len(chain)):
            lem = []
            lem += chain[index].lemmas(l)
            print('Level ' + str(index+1) + ':')
            print('HyperLemmata: ',lem)
            print('Definition: ' + str(chain[index].definition()))
            #key_chain(lem)
            offsetFromSynset(chain[index])
            ciliFromDefinition(chain[index].definition())

In [8]: def omw_lang(w, p=None, l='eng', ln=None):
        "returns information for a word-form in a specific language"

```

```

"w: a word"
"p: optional part-of-speech"
"l: an omw language"
"ln: optional lexname"
for synset in wn.synsets(w, lang=l, pos=p):
    if synset.lexname() == ln:
        print('Synset: ' + str(synset))
        print('Offset 3.0: ' + str(synset.offset()).zfill(8))
        print('Offset 3.1: ' + f(str(synset.offset()).zfill(8),wn3,wn31))
        ciliFromDefinition(synset.definition())
        print('Type: ' + str(synset.pos()))
        print('LexName: ' + str(synset.lexname()))
        print('Lemmata: ' + str(synset.lemma_names(1)))
        print('Definition: ' + str(synset.definition()))
        print('Examples: ' + str(synset.examples()))
        for hyper in synset.hypernyms():
            chain = hypernym_chain(synset.hypernyms())
            chain.insert(0,hyper)
            print('Hypernyms: ' + str(chain))
            info_chain(chain,1)
        print('-----')
    if ln == None:
        print('Synset: ' + str(synset))
        print('Offset 3.0: ' + str(synset.offset()).zfill(8))
        print('Offset 3.1: ' + f(str(synset.offset()).zfill(8),wn3,wn31))
        ciliFromDefinition(synset.definition())
        print('Type: ' + str(synset.pos()))
        print('LexName: ' + str(synset.lexname()))
        print('Lemmata: ' + str(synset.lemma_names(1)))
        print('Definition: ' + str(synset.definition()))
        print('Examples: ' + str(synset.examples()))
        for hyper in synset.hypernyms():
            chain = hypernym_chain(synset.hypernyms())
            chain.insert(0,hyper)
            print('Hypernyms: ' + str(chain))
            info_chain(chain,1)
        print('-----')

```

In [10]: # Test examples

```

#spanish words
s=['avanzar', 'mover', 'irse']

#english words
e=['advance', 'move', 'journey']

```

In [11]: # Compare English and Spanish senses and hierarchies:  
#sys.stdout = open("SpEng.txt", "w")

```

for i,(spa,eng) in enumerate(zip(s,e)):
    print('-----')
    print([i], 'SPANISH ' + spa)
    omw_lang(spa,'v','spa','verb.motion')
    print([i], 'ENGLISH ' + eng)
    omw_lang(eng,'v','eng','verb.motion')

#sys.stdout.close()

```

```

-----
[0] SPANISH avanzar
Synset: Synset('forge.v.04')
Offset 3.0: 01884266
Offset 3.1: 01888259
ili-ID: i31125
Type: v
LexName: verb.motion
Lemmata: ['avanzar']
Definition: move ahead steadily
Examples: ['He forged ahead']
Hypernyms: [Synset('advance.v.01'), Synset('travel.v.01')]
Level 1:
HyperLemmata: []
Definition: move forward, also in the metaphorical sense
Offset-ID(3.0): 01992503
Offset-ID(3.1): 01996535
ili-ID: i31702
Level 2:
HyperLemmata: [Lemma('travel.v.01.desplazarse'), Lemma('travel.v.01.ir'), Lemma('travel.v.01.moverse')]
Definition: change location; move, travel, or proceed, also metaphorically
Offset-ID(3.0): 01835496
Offset-ID(3.1): 01839438
ili-ID: i30898
-----

Synset: Synset('proceed.v.02')
Offset 3.0: 01995549
Offset 3.1: 01999581
ili-ID: i31717
Type: v
LexName: verb.motion
Lemmata: ['avanzar', 'continuar', 'proceder', 'seguir']
Definition: move ahead; travel onward in time or space
Examples: ['We proceeded towards Washington', 'She continued in the direction of the hills', 'V']
Hypernyms: [Synset('travel.v.01')]
Level 1:
HyperLemmata: [Lemma('travel.v.01.desplazarse'), Lemma('travel.v.01.ir'), Lemma('travel.v.01.moverse')]

```

Definition: change location; move, travel, or proceed, also metaphorically  
Offset-ID(3.0): 01835496  
Offset-ID(3.1): 01839438  
ili-ID: i30898

---

Synset: Synset('reach.v.07')  
Offset 3.0: 02022162  
Offset 3.1: 02026014  
ili-ID: Not in list  
Type: v  
LexName: verb.motion  
Lemmata: ['avanzar', 'llegar', 'lograr', 'lograr\_alcanzar', 'lograr\_ser']  
Definition: reach a goal, e.g., "make the first team"  
Examples: ['We made it!', 'She may not make the grade']  
Hypernyms: [Synset('achieve.v.01'), Synset('succeed.v.01')]  
Level 1:  
HyperLemmata: [Lemma('achieve.v.01.alcanzar'), Lemma('achieve.v.01.lograr')]  
Definition: to gain with effort  
Offset-ID(3.0): 02526085  
Offset-ID(3.1): 02531751  
ili-ID: i34338  
Level 2:  
HyperLemmata: [Lemma('succeed.v.01.conseguir'), Lemma('succeed.v.01.cumplir\_lo\_prometido'), Lemma('succeed.v.01.lograr')]  
Definition: attain success or reach a desired goal  
Offset-ID(3.0): 02524171  
Offset-ID(3.1): 02529837  
ili-ID: i34330

---

[0] ENGLISH advance

Synset: Synset('advance.v.01')  
Offset 3.0: 01992503  
Offset 3.1: 01996535  
ili-ID: i31702  
Type: v  
LexName: verb.motion  
Lemmata: ['advance', 'progress', 'pass\_on', 'move\_on', 'march\_on', 'go\_on']  
Definition: move forward, also in the metaphorical sense  
Examples: ['Time marches on']  
Hypernyms: [Synset('travel.v.01')]  
Level 1:  
HyperLemmata: [Lemma('travel.v.01.travel'), Lemma('travel.v.01.go'), Lemma('travel.v.01.move')]  
Definition: change location; move, travel, or proceed, also metaphorically  
Offset-ID(3.0): 01835496  
Offset-ID(3.1): 01839438  
ili-ID: i30898

---

Synset: Synset('advance.v.05')  
Offset 3.0: 01993926

Offset 3.1: 01997958

ili-ID: i31709

Type: v

LexName: verb.motion

Lemmata: ['advance', 'bring\_forward']

Definition: cause to move forward

Examples: ['Can you move the car seat forward?']

Hypernyms: [Synset('move.v.02')]

Level 1:

HyperLemmata: [Lemma('move.v.02.move'), Lemma('move.v.02.displace')]

Definition: cause to move or shift into a new position or place, both in a concrete and in an abstract sense

Offset-ID(3.0): 01850315

Offset-ID(3.1): 01854282

ili-ID: i30960

---

Synset: Synset('advance.v.11')

Offset 3.0: 01994288

Offset 3.1: 01998320

ili-ID: i31711

Type: v

LexName: verb.motion

Lemmata: ['advance', 'set\_ahead']

Definition: move forward

Examples: ['we have to advance clocks and watches when we travel eastward']

Hypernyms: [Synset('set.v.08'), Synset('adjust.v.01'), Synset('change.v.01')]

Level 1:

HyperLemmata: [Lemma('set.v.08.set')]

Definition: set to a certain position or cause to operate correctly

Offset-ID(3.0): 00298556

Offset-ID(3.1): 00299337

ili-ID: i23219

Level 2:

HyperLemmata: [Lemma('adjust.v.01.adjust'), Lemma('adjust.v.01.set'), Lemma('adjust.v.01.correct')]

Definition: alter or regulate so as to achieve accuracy or conform to a standard

Offset-ID(3.0): 00296178

Offset-ID(3.1): 00296959

ili-ID: i23208

Level 3:

HyperLemmata: [Lemma('change.v.01.change'), Lemma('change.v.01.alter'), Lemma('change.v.01.modify')]

Definition: cause to change; make different; cause a transformation

Offset-ID(3.0): 00126264

Offset-ID(3.1): 00126072

ili-ID: i22389

---

[1] SPANISH mover

Synset: Synset('move.v.03')

Offset 3.0: 01831531

Offset 3.1: 01835473  
ili-ID: i30886  
Type: v  
LexName: verb.motion  
Lemmata: ['mover', 'trasladar']  
Definition: move so as to change position, perform a nontranslational motion  
Examples: ['He moved his hand slightly to the right']  
-----

Synset: Synset('move.v.02')  
Offset 3.0: 01850315  
Offset 3.1: 01854282  
ili-ID: i30960  
Type: v  
LexName: verb.motion  
Lemmata: ['desplazar', 'mover']  
Definition: cause to move or shift into a new position or place, both in a concrete and in an abstract sense  
Examples: ['Move those boxes into the corner, please', "I'm moving my money to another bank",  
-----

[1] ENGLISH move  
Synset: Synset('travel.v.01')  
Offset 3.0: 01835496  
Offset 3.1: 01839438  
ili-ID: i30898  
Type: v  
LexName: verb.motion  
Lemmata: ['travel', 'go', 'move', 'locomote']  
Definition: change location; move, travel, or proceed, also metaphorically  
Examples: ['How fast does your new car go?', 'We travelled from Rome to Naples by bus', 'The p  
-----

Synset: Synset('move.v.02')  
Offset 3.0: 01850315  
Offset 3.1: 01854282  
ili-ID: i30960  
Type: v  
LexName: verb.motion  
Lemmata: ['move', 'displace']  
Definition: cause to move or shift into a new position or place, both in a concrete and in an abstract sense  
Examples: ['Move those boxes into the corner, please', "I'm moving my money to another bank",  
-----

Synset: Synset('move.v.03')  
Offset 3.0: 01831531  
Offset 3.1: 01835473  
ili-ID: i30886  
Type: v  
LexName: verb.motion  
Lemmata: ['move']  
Definition: move so as to change position, perform a nontranslational motion  
Examples: ['He moved his hand slightly to the right']

-----  
 Synset: Synset('move.v.04')  
 Offset 3.0: 01855606  
 Offset 3.1: 01859592  
 ili-ID: i30980  
 Type: v  
 LexName: verb.motion  
 Lemmata: ['move']  
 Definition: change residence, affiliation, or place of employment  
 Examples: ['We moved from Idaho to Nebraska', 'The basketball player moved from one team to another']  
 -----

-----  
 [2] SPANISH irse  
 Synset: Synset('walk\_off.v.02')  
 Offset 3.0: 02010082  
 Offset 3.1: 02014079  
 ili-ID: i31786  
 Type: v  
 LexName: verb.motion  
 Lemmata: ['irse', 'marcharse']  
 Definition: go away from  
 Examples: ['The actor walked off before he got his cue', 'I got annoyed and just walked off']  
 Hypernyms: [Synset('leave.v.01')]  
 Level 1:  
 HyperLemmata: [Lemma('leave.v.01.dejar'), Lemma('leave.v.01.ir'), Lemma('leave.v.01.marchar')]  
 Definition: go away from a place  
 Offset-ID(3.0): 02009433  
 Offset-ID(3.1): 02013448  
 ili-ID: i31785  
 -----

-----  
 [2] ENGLISH journey  
 Synset: Synset('travel.v.02')  
 Offset 3.0: 01845720  
 Offset 3.1: 01849662  
 ili-ID: i30940  
 Type: v  
 LexName: verb.motion  
 Lemmata: ['travel', 'journey']  
 Definition: undertake a journey or trip  
 Examples: []  
 Hypernyms: [Synset('travel.v.03')]  
 Level 1:  
 HyperLemmata: [Lemma('travel.v.03.travel'), Lemma('travel.v.03.trip'), Lemma('travel.v.03.journey')]  
 Definition: make a trip for pleasure  
 Offset-ID(3.0): 01843055  
 Offset-ID(3.1): 01846997  
 ili-ID: i30926  
 -----



```

Synset: Synset('travel.v.04')
Offset 3.0: 01846916
Offset 3.1: 01850858
ili-ID: i30944
Type: v
LexName: verb.motion
Lemmata: ['travel', 'journey']
Definition: travel upon or across
Examples: ['travel the oceans']
Hypernyms: [Synset('travel.v.01')]
Level 1:
HyperLemmata: [Lemma('travel.v.01.travel'), Lemma('travel.v.01.go'), Lemma('travel.v.01.move')]
Definition: change location; move, travel, or proceed, also metaphorically
Offset-ID(3.0): 01835496
Offset-ID(3.1): 01839438
ili-ID: i30898
-----

```

```

In [14]: m=['', '']
         e=['want', 'eat']

```

```

In [15]: # it does also work for Mandarin:

```

```

for i, (mand, eng) in enumerate(zip(m, e)):
    print('-----')
    print([i], 'MANDARIN ' + mand)
    omw_lang(mand, 'v', 'cmn')#, 'verb.motion')
    print([i], 'ENGLISH ' + eng)
    omw_lang(eng, 'v', 'eng')#, 'verb.motion')

```

```

-----
[0] MANDARIN

```

```

Synset: Synset('want.v.02')
Offset 3.0: 01188725
Offset 3.1: 01191258
ili-ID: i27561
Type: v
LexName: verb.consumption
Lemmata: ['', '', '', '', '']
Definition: have need of
Examples: ['This piano wants the attention of a competent tuner']
Hypernyms: [Synset('be.v.01')]
Level 1:
HyperLemmata: [Lemma('be.v.01.'), Lemma('be.v.01.')]
Definition: have the quality of being; (copula, used with an adjective or a predicate noun)
Offset-ID(3.0): 02604760
Offset-ID(3.1): 02610777

```

ili-ID: i34713

---

Synset: Synset('desire.v.01')

Offset 3.0: 01825237

Offset 3.1: 01829179

ili-ID: i30852

Type: v

LexName: verb.emotion

Lemmata: ['', '', '', '', '', '', '', '']

Definition: feel or have a desire for; want strongly

Examples: ['I want to go home now', 'I want my own room']

---

Synset: Synset('necessitate.v.01')

Offset 3.0: 02627934

Offset 3.1: 02634015

ili-ID: i34813

Type: v

LexName: verb.stative

Lemmata: ['', '', '', '', '', '']

Definition: require as useful, just, or proper

Examples: ['It takes nerve to do what she did', 'success usually requires hard work', 'This job

---

[0] ENGLISH want

Synset: Synset('desire.v.01')

Offset 3.0: 01825237

Offset 3.1: 01829179

ili-ID: i30852

Type: v

LexName: verb.emotion

Lemmata: ['desire', 'want']

Definition: feel or have a desire for; want strongly

Examples: ['I want to go home now', 'I want my own room']

---

Synset: Synset('want.v.02')

Offset 3.0: 01188725

Offset 3.1: 01191258

ili-ID: i27561

Type: v

LexName: verb.consumption

Lemmata: ['want', 'need', 'require']

Definition: have need of

Examples: ['This piano wants the attention of a competent tuner']

Hypernyms: [Synset('be.v.01')]

Level 1:

HyperLemmata: [Lemma('be.v.01.be')]

Definition: have the quality of being; (copula, used with an adjective or a predicate noun)

Offset-ID(3.0): 02604760

Offset-ID(3.1): 02610777

ili-ID: i34713

Synset: Synset('want.v.03')

Offset 3.0: 01317064

Offset 3.1: 01319724

ili-ID: i28269

Type: v

LexName: verb.contact

Lemmata: ['want']

Definition: hunt or look for; want for a particular reason

Examples: ['Your former neighbor is wanted by the FBI', 'Uncle Sam wants you']

Hypernyms: [Synset('search.v.01')]

Level 1:

HyperLemmata: [Lemma('search.v.01.search'), Lemma('search.v.01.seek'), Lemma('search.v.01.look')]

Definition: try to locate or discover, or try to establish the existence of

Offset-ID(3.0): 01315613

Offset-ID(3.1): 01318273

ili-ID: i28263

Synset: Synset('want.v.04')

Offset 3.0: 00709205

Offset 3.1: 00710458

ili-ID: i25251

Type: v

LexName: verb.cognition

Lemmata: ['want']

Definition: wish or demand the presence of

Examples: ['I want you here at noon!']

Hypernyms: [Synset('demand.v.01'), Synset('request.v.01'), Synset('communicate.v.01'), Synset('ask.v.01')]

Level 1:

HyperLemmata: [Lemma('demand.v.01.demand')]

Definition: request urgently and forcefully

Offset-ID(3.0): 00754942

Offset-ID(3.1): 00756987

ili-ID: i25472

Level 2:

HyperLemmata: [Lemma('request.v.01.request'), Lemma('request.v.01.bespeak'), Lemma('request.v.01.ask')]

Definition: express the need or desire for; ask for

Offset-ID(3.0): 00752764

Offset-ID(3.1): 00754770

ili-ID: i25463

Level 3:

HyperLemmata: [Lemma('communicate.v.01.communicate'), Lemma('communicate.v.01.pass\_on'), Lemma('communicate.v.01.transmit')]

Definition: transmit information

Offset-ID(3.0): 00742320

Offset-ID(3.1): 00744289

ili-ID: i25409

Level 4:

HyperLemmata: [Lemma('convey.v.03.convey'), Lemma('convey.v.03.transmit'), Lemma('convey.v.03.')]  
 Definition: transfer to another  
 Offset-ID(3.0): 02231661  
 Offset-ID(3.1): 02236443  
 ili-ID: i32901  
 Level 5:  
 HyperLemmata: [Lemma('transfer.v.02.transfer')]  
 Definition: move from one place to another  
 Offset-ID(3.0): 02232190  
 Offset-ID(3.1): 02236972  
 ili-ID: i32904  
 Level 6:  
 HyperLemmata: [Lemma('move.v.02.move'), Lemma('move.v.02.displace')]  
 Definition: cause to move or shift into a new position or place, both in a concrete and in an abstract sense  
 Offset-ID(3.0): 01850315  
 Offset-ID(3.1): 01854282  
 ili-ID: i30960

-----  
 Synset: Synset('want.v.05')  
 Offset 3.0: 02632567  
 Offset 3.1: 02638648  
 ili-ID: i34834  
 Type: v  
 LexName: verb.stative  
 Lemmata: ['want']  
 Definition: be without, lack; be deficient in  
 Examples: ['want courtesy', 'want the strength to go on living', 'flood victims wanting food and shelter']  
 Hypernyms: [Synset('miss.v.06')]  
 Level 1:  
 HyperLemmata: [Lemma('miss.v.06.miss'), Lemma('miss.v.06.lack')]  
 Definition: be without  
 Offset-ID(3.0): 02632353  
 Offset-ID(3.1): 02638434  
 ili-ID: i34833

-----  
 [1] MANDARIN

Synset: Synset('eat.v.01')  
 Offset 3.0: 01168468  
 Offset 3.1: 01170802  
 ili-ID: i27459  
 Type: v  
 LexName: verb.consumption  
 Lemmata: ['eat', 'consume']  
 Definition: take in solid food  
 Examples: ['She was eating a banana', 'What did you eat for dinner last night?']  
 Hypernyms: [Synset('consume.v.02')]  
 Level 1:

HyperLemmata: []  
Definition: serve oneself to, or consume regularly  
Offset-ID(3.0): 01156834  
Offset-ID(3.1): 01159300  
ili-ID: i27410  
Hypernyms: [Synset('eat.v.02')]  
Level 1:  
HyperLemmata: []  
Definition: eat a meal; take a meal  
Offset-ID(3.0): 01166351  
Offset-ID(3.1): 01168667  
ili-ID: i27450

---

[1] ENGLISH eat  
Synset: Synset('eat.v.01')  
Offset 3.0: 01168468  
Offset 3.1: 01170802  
ili-ID: i27459  
Type: v  
LexName: verb.consumption  
Lemmata: ['eat']  
Definition: take in solid food  
Examples: ['She was eating a banana', 'What did you eat for dinner last night?']  
Hypernyms: [Synset('consume.v.02')]  
Level 1:

HyperLemmata: [Lemma('consume.v.02.consume'), Lemma('consume.v.02.ingest'), Lemma('consume.v.02.consume.v.02')]  
Definition: serve oneself to, or consume regularly  
Offset-ID(3.0): 01156834  
Offset-ID(3.1): 01159300  
ili-ID: i27410  
Hypernyms: [Synset('eat.v.02')]  
Level 1:  
HyperLemmata: [Lemma('eat.v.02.eat')]  
Definition: eat a meal; take a meal  
Offset-ID(3.0): 01166351  
Offset-ID(3.1): 01168667  
ili-ID: i27450

---

Synset: Synset('eat.v.02')  
Offset 3.0: 01166351  
Offset 3.1: 01168667  
ili-ID: i27450  
Type: v  
LexName: verb.consumption  
Lemmata: ['eat']  
Definition: eat a meal; take a meal  
Examples: ['We did not eat until 10 P.M. because there were so many phone calls', 'I didn't eat']  
Hypernyms: [Synset('consume.v.02')]

Level 1:

HyperLemmata: [Lemma('consume.v.02.consume'), Lemma('consume.v.02.ingest'), Lemma('consume.v.02.consume')]

Definition: serve oneself to, or consume regularly

Offset-ID(3.0): 01156834

Offset-ID(3.1): 01159300

ili-ID: i27410

---

Synset: Synset('feed.v.06')

Offset 3.0: 01179865

Offset 3.1: 01182162

ili-ID: i27518

Type: v

LexName: verb.consumption

Lemmata: ['feed', 'eat']

Definition: take in food; used of animals only

Examples: ["This dog doesn't eat certain kinds of meat", 'What do whales eat?']

Hypernyms: [Synset('consume.v.02')]

Level 1:

HyperLemmata: [Lemma('consume.v.02.consume'), Lemma('consume.v.02.ingest'), Lemma('consume.v.02.consume')]

Definition: serve oneself to, or consume regularly

Offset-ID(3.0): 01156834

Offset-ID(3.1): 01159300

ili-ID: i27410

---

Synset: Synset('eat.v.04')

Offset 3.0: 01766273

Offset 3.1: 01770125

ili-ID: i30568

Type: v

LexName: verb.emotion

Lemmata: ['eat', 'eat\_on']

Definition: worry or cause anxiety in a persistent way

Examples: ["What's eating you?"]

Hypernyms: [Synset('worry.v.03'), Synset('perturb.v.01'), Synset('disturb.v.01'), Synset('affect.v.01')]

Level 1:

HyperLemmata: [Lemma('worry.v.03.worry'), Lemma('worry.v.03.vex')]

Definition: disturb the peace of mind of; afflict with mental agitation or distress

Offset-ID(3.0): 01765908

Offset-ID(3.1): 01769760

ili-ID: i30567

Level 2:

HyperLemmata: [Lemma('perturb.v.01.perturb'), Lemma('perturb.v.01.unhinge'), Lemma('perturb.v.01.disturb')]

Definition: disturb in mind or make uneasy or cause to be worried or alarmed

Offset-ID(3.0): 01764171

Offset-ID(3.1): 01768023

ili-ID: i30562

Level 3:

HyperLemmata: [Lemma('disturb.v.01.disturb'), Lemma('disturb.v.01.upset'), Lemma('disturb.v.01.trouble')]

Definition: move deeply  
Offset-ID(3.0): 01770501  
Offset-ID(3.1): 01774422  
ili-ID: i30590

Level 4:

HyperLemmata: [Lemma('affect.v.05.affect'), Lemma('affect.v.05.impress'), Lemma('affect.v.05.')

Definition: have an emotional or cognitive impact upon

Offset-ID(3.0): 01767949  
Offset-ID(3.1): 01771801  
ili-ID: i30577

---

Synset: Synset('consume.v.05')

Offset 3.0: 01157517  
Offset 3.1: 01159815  
ili-ID: i27412

Type: v

LexName: verb.consumption

Lemmata: ['consume', 'eat\_up', 'use\_up', 'eat', 'deplete', 'exhaust', 'run\_through', 'wipe\_out

Definition: use up (resources or materials)

Examples: ['this car consumes a lot of gas', 'We exhausted our savings', 'They run through 20

Hypernyms: [Synset('spend.v.02'), Synset('pay.v.01'), Synset('give.v.03'), Synset('transfer.v.

Level 1:

HyperLemmata: [Lemma('spend.v.02.spend'), Lemma('spend.v.02.expend'), Lemma('spend.v.02.drop')

Definition: pay out

Offset-ID(3.0): 02267060  
Offset-ID(3.1): 02271905  
ili-ID: i33072

Level 2:

HyperLemmata: [Lemma('pay.v.01.pay')]

Definition: give money, usually in exchange for goods or services

Offset-ID(3.0): 02251743  
Offset-ID(3.1): 02256551  
ili-ID: i32996

Level 3:

HyperLemmata: [Lemma('give.v.03.give')]

Definition: transfer possession of something concrete or abstract to somebody

Offset-ID(3.0): 02199590  
Offset-ID(3.1): 02204104  
ili-ID: i32755

Level 4:

HyperLemmata: [Lemma('transfer.v.05.transfer')]

Definition: cause to change ownership

Offset-ID(3.0): 02220461  
Offset-ID(3.1): 02225243  
ili-ID: i32847

---

Synset: Synset('corrode.v.01')

Offset 3.0: 00274283

Offset 3.1: 00275082  
 ili-ID: i23089  
 Type: v  
 LexName: verb.change  
 Lemmata: ['corrode', 'eat', 'rust']  
 Definition: cause to deteriorate due to the action of water, air, or an acid  
 Examples: ['The acid corroded the metal', 'The steady dripping of water rusted the metal stopping']  
 Hypernyms: [Synset('damage.v.01'), Synset('change.v.01')]  
 Level 1:  
 HyperLemmata: [Lemma('damage.v.01.damage')]  
 Definition: inflict damage upon  
 Offset-ID(3.0): 00258857  
 Offset-ID(3.1): 00259743  
 ili-ID: i23012  
 Level 2:  
 HyperLemmata: [Lemma('change.v.01.change'), Lemma('change.v.01.alter'), Lemma('change.v.01.modify')]  
 Definition: cause to change; make different; cause a transformation  
 Offset-ID(3.0): 00126264  
 Offset-ID(3.1): 00126072  
 ili-ID: i22389

---

In [16]: # Example for a NOUN:  
 omw\_lang('air', 'n', 'eng', ln='noun.location')

Synset: Synset('air.n.02')  
 Offset 3.0: 08653314  
 Offset 3.1: 08670889  
 ili-ID: i82446  
 Type: n  
 LexName: noun.location  
 Lemmata: ['air']  
 Definition: the region above the ground  
 Examples: ['her hand stopped in mid air', 'he threw the ball into the air']  
 Hypernyms: [Synset('region.n.01'), Synset('location.n.01'), Synset('object.n.01'), Synset('physical.location.n.01')]  
 Level 1:  
 HyperLemmata: [Lemma('region.n.01.region'), Lemma('region.n.01.part')]  
 Definition: the extended spatial location of something  
 Offset-ID(3.0): 08630039  
 Offset-ID(3.1): 08647614  
 ili-ID: i82338  
 Level 2:  
 HyperLemmata: [Lemma('location.n.01.location')]  
 Definition: a point or extent in space  
 Offset-ID(3.0): 00027167  
 Offset-ID(3.1): 00027365  
 ili-ID: i35580



Level 3:

HyperLemmata: [Lemma('object.n.01.object'), Lemma('object.n.01.physical\_object')]

Definition: a tangible and visible entity; an entity that can cast a shadow

Offset-ID(3.0): 00002684

Offset-ID(3.1): 00002684

ili-ID: i35549

Level 4:

HyperLemmata: [Lemma('physical\_entity.n.01.physical\_entity')]

Definition: an entity that has physical existence

Offset-ID(3.0): 00001930

Offset-ID(3.1): 00001930

ili-ID: i35546

Level 5:

HyperLemmata: [Lemma('entity.n.01.entity')]

Definition: that which is perceived or known or inferred to have its own distinct existence (1

Offset-ID(3.0): 00001740

Offset-ID(3.1): 00001740

ili-ID: i35545

-----  
Synset: Synset('atmosphere.n.03')

Offset 3.0: 08499057

Offset 3.1: 08516085

ili-ID: i81717

Type: n

LexName: noun.location

Lemmata: ['atmosphere', 'air']

Definition: the mass of air surrounding the Earth

Examples: ['there was great heat as the comet entered the atmosphere', 'it was exposed to the a

Hypernyms: [Synset('region.n.01'), Synset('location.n.01'), Synset('object.n.01'), Synset('phy

Level 1:

HyperLemmata: [Lemma('region.n.01.region'), Lemma('region.n.01.part')]

Definition: the extended spatial location of something

Offset-ID(3.0): 08630039

Offset-ID(3.1): 08647614

ili-ID: i82338

Level 2:

HyperLemmata: [Lemma('location.n.01.location')]

Definition: a point or extent in space

Offset-ID(3.0): 00027167

Offset-ID(3.1): 00027365

ili-ID: i35580

Level 3:

HyperLemmata: [Lemma('object.n.01.object'), Lemma('object.n.01.physical\_object')]

Definition: a tangible and visible entity; an entity that can cast a shadow

Offset-ID(3.0): 00002684

Offset-ID(3.1): 00002684

ili-ID: i35549

Level 4:

HyperLemmata: [Lemma('physical\_entity.n.01.physical\_entity')]

Definition: an entity that has physical existence

Offset-ID(3.0): 00001930

Offset-ID(3.1): 00001930

ili-ID: i35546

Level 5:

HyperLemmata: [Lemma('entity.n.01.entity')]

Definition: that which is perceived or known or inferred to have its own distinct existence (1

Offset-ID(3.0): 00001740

Offset-ID(3.1): 00001740

ili-ID: i35545

---