

Word associations and the distance properties of context-aware word embeddings

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Supplementary materials

Experiment 2.1

From Tversky and Gati (1978)

| List of countries | | Updated list of countries | |
|-------------------|--------------|---------------------------|-------------|
| USA | Mexico | USA | Mexico |
| USSR | Poland | Russia | Poland |
| China | Albania | China | Albania |
| USA | Israel | USA | Israel |
| Japan | Philippines | Japan | Philippines |
| USA | Canada | USA | Canada |
| USSR | Israel | Russia | Israel |
| England | Ireland | England | Ireland |
| West Germany | Austria | Germany | Austria |
| USSR | France | Russia | France |
| Belgium | Luxembourg | Belgium | Luxembourg |
| USA | USSR | USA | Russia |
| China | North Korea | China | North Korea |
| India | Ceylon | India | Sri Lanka |
| USA | France | USA | France |
| USSR | Cuba | Russia | Cuba |
| England | Jordan | England | Jordan |
| France | Israel | France | Israel |
| USA | West Germany | USA | Germany |
| USSR | Syria | Russia | Syria |
| France | Algeria | France | Algeria |

Experiment 2.3

List of hypernym/hyponym (He/Ho) verbs (Nelson et al., 2004)

| Hyponym | Hyponym | Hyponym | Hyponym | Hyponym | Hyponym |
|----------|----------|----------|-----------|------------|------------|
| change | affect | turn | flip | be | seem |
| surprise | amaze | move | flutter | hurt | shoot |
| inform | announce | drink | gulp | drink | sip |
| request | beg | pull | haul | jump | skip |
| jump | bounce | attach | hitch | move | slide |
| break | burst | travel | hitchhike | cover | smother |
| hide | bury | desire | hope | nap | snooze |
| breathe | choke | move | hustle | understand | solve |
| throw | chuck | touch | kiss | control | steer |
| rise | climb | bend | lean | remove | strip |
| travel | come | walk | limp | try | strive |
| control | command | sit | lounge | drink | suck |
| desire | crave | increase | magnify | tell | suggest |
| hold | cuddle | join | marry | guess | suspect |
| decrease | decline | control | operate | annoy | tease |
| change | decorate | beat | overcome | move | throw |
| leave | depart | beat | overpower | pull | tow |
| hide | disguise | forgive | pardon | move | tow |
| reject | disown | throw | pelt | move | transplant |
| choose | elect | pull | pluck | walk | tread |
| leave | escape | guess | predict | remove | unload |
| move | evict | like | prefer | shake | wag |
| forgive | excuse | watch | preview | inform | warn |
| tell | express | gather | reap | rub | wipe |
| attach | fasten | appear | reappear | cover | wrap |
| leave | flee | move | rearrange | | |
| throw | fling | get | recruit | | |

Sample of hypernym/hyponym (He/Ho) nouns (Nelson et al., 2004)

| Hyponym | Hyponym | Hyponym | Hyponym | Hyponym | Hyponym |
|--------------|------------|------------|--------------|-----------|------------|
| animal | aardvark | Instrument | compass | animal | primate |
| athlete | acrobat | feeling | compassion | idea | principle |
| event | activity | group | conference | gift | prize |
| person | actor | person | contractor | plan | project |
| word | adjective | speech | conversation | word | pronoun |
| person | adult | bottle | flask | christian | protestant |
| person | adversary | container | flask | fruit | prune |
| group | agency | insect | flea | fairy | puck |
| plan | agenda | group | fleet | food | pudding |
| loyalty | allegiance | bubble | foam | wind | puff |
| street | alley | cloud | fog | goal | purpose |
| road | alley | word | form | pen | quill |
| book | almanac | animal | fox | fur | raccoon |
| singer | alto | group | fraternity | care | treatment |
| car | ambulance | crime | fraud | ditch | trench |
| science | anatomy | animal | frog | group | tribe |
| alcohol | anisetete | ice | frost | bird | turkey |
| drug | anisetete | candy | fudge | animal | turtle |
| joint | ankle | money | fund | tooth | tusk |
| animal | anteater | anger | fury | storm | typhoon |
| animal | antelope | hair | fuzz | group | union |
| remedy | antidote | bird | gander | part | unit |
| drug | antidote | instrument | gauge | lover | valentine |
| animal | ape | animal | gazelle | vehicle | van |
| alcohol | cocktail | man | gentleman | jar | vase |
| beverage | coffee | science | geology | meat | veal |
| salad | coleslaw | hole | leak | poison | venom |
| food | coleslaw | material | leather | cereal | wheat |
| group | committee | story | legend | liquor | whiskey |
| organization | committee | group | legion | woman | widow |
| group | community | fruit | lemon | woman | wife |
| group | company | car | limousine | animal | zebra |

Experiment 3

From Nelson et al. (2004)

| Sample of transitive triples | | | Sample of intransitive triples | | |
|------------------------------|----------|-----------|--------------------------------|-------------|-----------|
| w1 | w2 | w3 | w1 | w2 | w3 |
| achievement | grade | work | a | alphabet | school |
| advice | cramp | pain | abdomen | cramp | muscle |
| agriculture | land | earth | ability | power | wealth |
| ambulance | sickness | hospital | baby | adult | father |
| amount | money | lot | background | painting | brush |
| boundary | cross | country | case | story | teller |
| bounty | price | money | cashew | salt | water |
| burden | stress | work | catastrophe | destruction | war |
| chili | soup | food | cattle | herd | cow |
| chinese | dish | food | furniture | couch | potato |
| chore | work | boring | gal | seagull | white |
| contractor | business | man | galaxy | space | ship |
| costume | shop | clothes | gang | war | death |
| creature | dragon | animal | gold | wealth | happiness |
| crest | waves | water | grade | letter | paper |
| degree | celsius | heat | grounds | mansion | home |
| democracy | majority | vote | holder | folder | book |
| dessert | food | fat | holiness | christian | god |
| gang | member | friend | home | plate | spoon |
| gate | door | house | hypothesis | statement | question |
| gazelle | giraffe | africa | lieutenant | war | pain |
| lord | prayer | bible | lip | stick | wood |
| lot | land | ground | male | boy | blue |
| lovers | two | love | mansion | dracula | blood |
| mate | marriage | husband | mole | rodent | roach |
| matter | atom | chemistry | molecule | science | art |
| mayonnaise | bread | white | month | time | money |
| moss | plant | tree | monument | cement | house |

If you cite these supplementary materials,
please cite

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References

Amos Tversky and Itamar Gati. 1978. Studies of similarity. *Cognition and categorization*. Hillsdale, Erlbaum, pages 79–98.

Douglas L Nelson, Cathy L McEvoy, and Thomas A Schreiber. 2004. The University of South Florida free association, rhyme, and word fragment norms. *Behavior Research Methods, Instruments, & Computers*, 36(3):402–407.