Gap distance:

* Distance

1. No modifier
2. Short modifier version (3-5 words)
3. Medium modifier version (6-8 words)
4. Long modifier version (8-12 words)

* Gap type:

1. Direct object (DO) gap
2. Indirect object (IO) gap

4 x 2 x 2 x 2 = 32 conditions

Sample sentence from Wilcox et al. 2018:

[I know]prefix [that/whatDO/whoIO]filler [your friend]subj [who you met recently on a walking tour of the city]modifier [gave]intr\_verb [a baguette]DO [to]prep [Mary]IO [last weekend]temp\_mod.

Sentence template:

Prefix + [filler] + subj + [modifier\_by\_distance] + verb + [DO gap] + prep + [IO gap] + temporal modifier

A complete set of conditions in one item:

[-filler, -gap] (the second half is simply reduplicated)

I know [that] your friend gave a baguette to Mary last weekend.

I know [that] your friend [who you admire] gave a baguette to Mary last weekend.

I know [that] your friend [who you ate lunch with yesterday] gave a baguette to Mary last weekend.

I know [that] your friend [who you met recently on a walking tour of the city] gave a baguette to Mary last weekend.

I know [that] your friend gave a baguette to Mary last weekend.

I know [that] your friend [who you admire] gave a baguette to Mary last weekend.

I know [that] your friend [who you ate lunch with yesterday] gave a baguette to Mary last weekend.

I know [that] your friend [who you met recently on a walking tour of the city] gave a baguette to Mary last weekend.

[-filler, +gap]

I know [that] your friend gave [ \_\_ ] to Mary last weekend.

I know [that] your friend [who you admire] gave [ \_\_ ] to Mary last weekend.

I know [that] your friend [who you ate lunch with yesterday] gave [ \_\_ ] to Mary last weekend.

I know [that] your friend [who you met recently on a walking tour of the city] gave [ \_\_ ] to Mary last weekend.

I know [that] your friend gave a baguette to [ \_\_ ] last weekend.

I know [that] your friend [who you admire] gave a baguette to [ \_\_ ] last weekend.

I know [that] your friend [who you ate lunch with yesterday] gave a baguette to [ \_\_ ] last weekend.

I know [that] your friend [who you met recently on a walking tour of the city] gave a baguette to [ \_\_ ] last weekend.

[+filler, -gap]

I know [whatDO] your friend gave a baguette to Mary last weekend.

I know [whatDO] your friend [who you admire] gave a baguette to Mary last weekend.

I know [whatDO] your friend [who you ate lunch with yesterday] gave a baguette to Mary last weekend.

I know [whatDO] your friend [who you met recently on a walking tour of the city] gave a baguette to Mary last weekend.

I know [whoIO] your friend gave a baguette to Mary last weekend.

I know [whoIO] your friend [who you admire] gave a baguette to Mary last weekend.

I know [whoIO] your friend [who you ate lunch with yesterday] gave a baguette to Mary last weekend.

I know [whoIO] your friend [who you met recently on a walking tour of the city] gave a baguette to Mary last weekend.

[+filler, +gap]

I know [whatDO] your friend gave [ \_\_ ] to Mary last weekend.

I know [whatDO] your friend [who you admire] gave [ \_\_ ] to Mary last weekend.

I know [whatDO] your friend [who you ate lunch with yesterday] gave [ \_\_ ] to Mary last weekend.

I know [whatDO] your friend [who you met recently on a walking tour of the city] gave [ \_\_ ] to Mary last weekend.

I know [whoIO] your friend gave a baguette to [ \_\_ ] last weekend.

I know [whoIO] your friend [who you admire] gave a baguette to [ \_\_ ] last weekend.

I know [whoIO] your friend [who you ate lunch with yesterday] gave a baguette to [ \_\_ ] last weekend.

I know [whoIO] your friend [who you met recently on a walking tour of the city] gave a baguette to [ \_\_ ] last weekend.

Prefixes:

Pronouns: he, she, we, I, they

Proper names: Mary, John, James, Alice, Alex

Occupations: The writer, The police, the students, the mother, the engineer, the prince

Animals: the dog, the cat, the rabbit, the lion, the rat

+verbs:

Epistemic verbs: know, believe, think, realize

Stative verbs/adj predicate: like, love, hate

Others: tell, said, predict

Wonder, find out, discover, reveal

Modifiers\_by\_distance:

Subj:

Verb: intransitive verbs only

Obj:

Temporal modifiers:

Sentence:

1. [The manager predicts]\_prefix [that/whatDO/whoIO]\_filler [the intern]\_subj [who you recommended highly after the summer project]\_modifier [forwarded]\_verb [an important email]\_DO [to]\_prep [the client]\_IO [earlier this morning.]\_temp\_mod

[-filler, -gap]

The manager predicts that the intern forwarded an important email to the client earlier this morning.

The manager predicts that the intern [who you admire] forwarded an important email to the client earlier this morning.

The manager predicts that the intern [who you worked closely with on the project] forwarded an important email to the client earlier this morning.

The manager predicts that the intern [who you recommended highly after the summer project] forwarded an important email to the client earlier this morning.

(repeat)

The manager predicts that the intern forwarded an important email to the client earlier this morning.

The manager predicts that the intern [who you admire] forwarded an important email to the client earlier this morning.

The manager predicts that the intern [who you worked closely with on the project] forwarded an important email to the client earlier this morning.

The manager predicts that the intern [who you recommended highly after the summer project] forwarded an important email to the client earlier this morning.

[-filler, +gap]

DO Gap:

The manager predicts that the intern forwarded [ \_\_\_ ] to the client earlier this morning.

The manager predicts that the intern [who you admire] forwarded [ \_\_\_ ] to the client earlier this morning.

The manager predicts that the intern [who you worked closely with on the project] forwarded [ \_\_\_ ] to the client earlier this morning.

The manager predicts that the intern [who you recommended highly after the summer project] forwarded [ \_\_\_ ] to the client earlier this morning.

IO Gap:

The manager predicts that the intern forwarded an important email to [ \_\_\_ ] earlier this morning.

The manager predicts that the intern [who you admire] forwarded an important email to [ \_\_\_ ] earlier this morning.

The manager predicts that the intern [who you worked closely with on the project] forwarded an important email to [ \_\_\_ ] earlier this morning.

The manager predicts that the intern [who you recommended highly after the summer project] forwarded an important email to [ \_\_\_ ] earlier this morning.

[+filler, -gap]

DO (filler = "what")

The manager predicts what the intern forwarded an important email to the client earlier this morning.

The manager predicts what the intern [who you admire] forwarded an important email to the client earlier this morning.

The manager predicts what the intern [who you worked closely with on the project] forwarded an important email to the client earlier this morning.

The manager predicts what the intern [who you recommended highly after the summer project] forwarded an important email to the client earlier this morning.

IO (filler = "who")

The manager predicts who the intern forwarded an important email to the client earlier this morning.

The manager predicts who the intern [who you admire] forwarded an important email to the client earlier this morning.

The manager predicts who the intern [who you worked closely with on the project] forwarded an important email to the client earlier this morning.

The manager predicts who the intern [who you recommended highly after the summer project] forwarded an important email to the client earlier this morning.

[+filler, +gap]

DO Gap:

The manager predicts what the intern forwarded [ \_\_\_ ] to the client earlier this morning.

The manager predicts what the intern [who you admire] forwarded [ \_\_\_ ] to the client earlier this morning.

The manager predicts what the intern [who you worked closely with on the project] forwarded [ \_\_\_ ] to the client earlier this morning.

The manager predicts what the intern [who you recommended highly after the summer project] forwarded [ \_\_\_ ] to the client earlier this morning.

IO Gap:

The manager predicts who the intern forwarded an important email to [ \_\_\_ ] earlier this morning.

The manager predicts who the intern [who you admire] forwarded an important email to [ \_\_\_ ] earlier this morning.

The manager predicts who the intern [who you worked closely with on the project] forwarded an important email to [ \_\_\_ ] earlier this morning.

The manager predicts who the intern [who you recommended highly after the summer project] forwarded an important email to [ \_\_\_ ] earlier this morning.

1. [The journalist revealed]\_prefix [that/whatDO/whoIO]\_filler [the scientist]\_subj [ \_\_\_ ]\_modifier [sent]\_verb [an urgent email]\_DO [to]\_prep [the director]\_IO [this morning.]\_temp\_mod

Short modifier: who you met yesterday

Medium modifier: who you spoke with briefly at the conference

Long modifier: who you accidentally bumped into during the science convention downtown 10

1. [We discovered]\_prefix [that/whatDO/whoIO]\_filler [the student]\_subj [ \_\_\_ ]\_modifier [handed]\_verb [a completed form]\_DO [to]\_prep [the registrar]\_IO [before noon.]\_temp\_mod

Short modifier: who studies biology

Medium modifier: who submitted their thesis last week

Long modifier: who was preparing for the graduate school entrance exam last semester 11

1. [The teacher wondered]\_prefix [that/whatDO/whoIO]\_filler [the librarian]\_subj [ \_\_\_ ]\_modifier [offered]\_verb [a rare book]\_DO [to]\_prep [the professor]\_IO [earlier today.]\_temp\_mod

Short modifier: who you emailed yesterday

Medium modifier: who organized the book sale last month

Long modifier: who collaborated with several departments for the new library project this year 12

1. [They found out]\_prefix [that/whatDO/whoIO]\_filler [the baker]\_subj [ \_\_\_ ]\_modifier [gave]\_verb [a free loaf]\_DO [to]\_prep [the customer]\_IO [this morning.]\_temp\_mod

Short modifier: who lives nearby

Medium modifier: who visits the bakery every Sunday

Long modifier: who always buys three different kinds of bread every weekend morning 11

1. [The analyst predicted]\_prefix [that/whatDO/whoIO]\_filler [the manager]\_subj [ \_\_\_ ]\_modifier [allocated]\_verb [additional funds]\_DO [to]\_prep [the research team]\_IO [last quarter.]\_temp\_mod

Short modifier: who you interviewed

Medium modifier: who managed the budget revisions last year

Long modifier: who was responsible for overseeing multiple department finances over the fiscal year 12

1. [The musician revealed]\_prefix [that/whatDO/whoIO]\_filler [the producer]\_subj [sent]\_verb [the new album]\_DO [to]\_prep [the record label]\_IO [last Friday.]\_temp\_mod

Short modifier: who you met backstage

Medium modifier: who worked with several Grammy-winning artists recently

Long modifier: who negotiated multiple high-profile contracts during the summer music festival season 11

1. [We guessed]\_prefix [that/whatDO/whoIO]\_filler [the guide]\_subj [showed]\_verb [a secret passage]\_DO [to]\_prep [the tourists]\_IO [during the afternoon tour.]\_temp\_mod

Short modifier: who led yesterday's tour

Medium modifier: who explained the history of the castle ruins

Long modifier: who memorized every detail about the centuries-old underground tunnels discovered last year 12

1. [The professor found out]\_prefix [that/whatDO/whoIO]\_filler [the assistant]\_subj [delivered]\_verb [the exam papers]\_DO [to]\_prep [the department office]\_IO [this morning.]\_temp\_mod

Short modifier: who you trained recently

Medium modifier: who helped organize the graduate seminar last semester

Long modifier: who organized workshops and conferences for incoming PhD students last year 11

1. [I discovered]\_prefix [that/whatDO/whoIO]\_filler [the intern]\_subj [handed]\_verb [a business card]\_DO [to]\_prep [the CEO]\_IO [at the conference yesterday.]\_temp\_mod

Short modifier: who assisted with registration

Medium modifier: who attended both morning keynote speeches

Long modifier: who managed to network with several startup founders during the weekend event 12

1. [The professor was informed]\_prefix [that/whatDO/whoIO]\_filler [the assistant]\_subj [handed]\_verb [a completed assignment]\_DO [to]\_prep [the supervisor]\_IO [yesterday afternoon.]\_temp\_mod

Short modifier: who arrived early

Medium modifier: who worked late every night last week

Long modifier: who collaborated with a senior researcher on an academic publishing project 11

1. [It was revealed]\_prefix [that/whatDO/whoIO]\_filler [the engineer]\_subj [delivered]\_verb [the technical report]\_DO [to]\_prep [the project manager]\_IO [early Monday morning.]\_temp\_mod

Short modifier: who visited last week

Medium modifier: who inspected the new construction site yesterday

Long modifier: who worked with teams during the project’s early design phase 10

1. [We realized]\_prefix [that/whatDO/whoIO]\_filler [the chef]\_subj [offered]\_verb [a complimentary dessert]\_DO [to]\_prep [the guests]\_IO [after the dinner service.]\_temp\_mod

Short modifier: who you met downtown

Medium modifier: who just opened a restaurant across the street

Long modifier: who trained at a culinary institute in France before returning home 11

1. [The students were told]\_prefix [that/whatDO/whoIO]\_filler [the librarian]\_subj [sent]\_verb [a late notice]\_DO [to]\_prep [the borrower]\_IO [yesterday evening.]\_temp\_mod

Short modifier: who borrowed three books

Medium modifier: who had an overdue fine from last semester

Long modifier: who frequently attended library-sponsored workshops and lectures throughout the year 11

1. [The curator found out]\_prefix [that/whatDO/whoIO]\_filler [the artist]\_subj [donated]\_verb [a sculpture]\_DO [to]\_prep [the museum]\_IO [last spring.]\_temp\_mod

Short modifier: who you met briefly

Medium modifier: who displayed their work in the modernist section

Long modifier: who exhibited environmental-themed artwork at several major shows last decade 11

1. [It was discovered]\_prefix [that/whatDO/whoIO]\_filler [the counselor]\_subj [recommended]\_verb [a therapist]\_DO [to]\_prep [the student]\_IO [earlier this semester.]\_temp\_mod

Short modifier: who you spoke with today

Medium modifier: who specializes in anxiety and stress management techniques

Long modifier: who created group programs to help first-year students adjust to college life 12

1. [The volunteers noticed]\_prefix [that/whatDO/whoIO]\_filler [the coordinator]\_subj [handed out]\_verb [name tags]\_DO [to]\_prep [the participants]\_IO [at the start of the workshop.]\_temp\_mod

Short modifier: who organized yesterday's event

Medium modifier: who sent the final schedule to everyone

Long modifier: who worked with nonprofits to deliver weekend training sessions in several cities 12

1. [The executive was informed]\_prefix [that/whatDO/whoIO]\_filler [the assistant]\_subj [forwarded]\_verb [the confidential memo]\_DO [to]\_prep [the legal team]\_IO [this afternoon.]\_temp\_mod

Short modifier: who handled sensitive files

Medium modifier: who worked under the director for two years

Long modifier: who managed contracts and paperwork during last quarter’s corporate audit process 11

1. [We learned]\_prefix [that/whatDO/whoIO]\_filler [the teacher]\_subj [offered]\_verb [extra credit]\_DO [to]\_prep [the students]\_IO [after the difficult exam.]\_temp\_mod

Short modifier: who teaches math

Medium modifier: who helped organize the school science fair

Long modifier: who coached academic teams at regional and national competitions last year 11

1. [It was reported]\_prefix [that/whatDO/whoIO]\_filler [the official]\_subj [allocated]\_verb [additional resources]\_DO [to]\_prep [the emergency responders]\_IO [following the storm.]\_temp\_mod

Short modifier: who oversaw safety measures

Medium modifier: who briefed the mayor’s office last week

Long modifier: who coordinated disaster relief with agencies across the state during hurricane season 12