

On-line Supplementary Materials

Learning Material – Experiment 1

SENTENCE	COMPREHENSION QUESTION
Mary lent a car to the old woman	Did Mary lend a car to the old woman?
Mary lent a car to the old woman	Did Mary lend the flower to the old woman?
Mary lent a car to the old woman	Did Mary give a car to the old woman?
Mary lent a car to the old woman	Did Mary give a car to the old man?
Mary lent a car to the old woman	Was the car given to the old woman?
Mary lent a car to the old woman	The boat was given to the old woman?
Mary lent a car to the old woman	Did Mary deliver the car to an old woman?
Mary lent a car to the old woman	Did Mary buy the car from an old woman?
Mary lent a car to the old woman	Does the old woman have a new car?
Mary lent a car to the old woman	Were the flowers lend to Mary?
Guy handed the cracked plate to the waitress	Did Guy give the cracked plate to the waitress?
Guy handed the cracked plate to the waitress	Did John give the cracked plate to the waitress?
Guy handed the cracked plate to the waitress	Was cracked the plate that Guy gave to the waitress?
Guy handed the cracked plate to the waitress	Was full of chicken the plate that Guy had?
Guy handed the cracked plate to the waitress	Did Guy give something to the waitress?
Guy handed the cracked plate to the waitress	Did the waitress give Guy a cracked plate?
Mike clenched the two wheels to Mark	Did Mike something to the wheels?

Nick made some hot coffee to sue	Was the coffee cold?
Nick made some hot coffee to sue	Had Sue a coffee finally?
Nick made some hot coffee to sue	Did Sue receive something from her mother?
Nick made some hot coffee to sue	Did Nick give something to the girl?
Nick made some hot coffee to sue	Was the green tea given to Sue?
Nick made some hot coffee to sue	Did Sue receive something from the boy?
Nick made some hot coffee to sue	Was Nick making soup?
Nick made some hot coffee to sue	Was the coffee hot?
Nick made some hot coffee to sue	Did Sue make some hot coffee to Jerry?
Bill replied a long letter to Jack	Did Jack receive a letter?
Bill replied a long letter to Jack	Did Bill send an e-mail to Larry?
Bill replied a long letter to Jack	Did Bill write a long letter?
Bill replied a long letter to Jack	Did Jack receive a small post card?
Bill replied a long letter to Jack	Was Bill writing to Jack?
Bill replied a long letter to Jack	Did Bill and Jack see each other and talk?
Bill replied a long letter to Jack	Did Jack send a letter to Bill in the first place?
Jean removed some warm clothes to Charles	Was it cold where Jean and Charles were together?
Jean removed some warm clothes to Charles	Was Charles without his coat?
Jean removed some warm clothes to Charles	Was Jean cold?
Jane lent Larry an expensive ring	Have Larry a new ring?
Jane lent Larry an expensive ring	Did Larry steal a necklace to Jane?
Jane lent Larry an expensive ring	Was the ring expensive?
Jane lent Larry an expensive ring	Did Jane give a laptop to Mark?
Jane lent Larry an expensive ring	Did Larry receive something expensive?
Jane lent Larry an expensive ring	Did Larry lend a ring to Jane?

Jane lent Larry an expensive ring	Has the ring any value?
Jane lent Larry an expensive ring	Did Sue send a gift to Peter?
Peter showed the English teacher an excellent paper	Did Peter a good job with the paper?
Peter showed the English teacher an excellent paper	Did Peter forget to do the paper?
Peter showed the English teacher an excellent paper	Was the paper excellent?
Peter showed the English teacher an excellent paper	Was the paper given to the Spanish teacher?
Peter showed the English teacher an excellent paper	Did Peter give something to the English teacher?
Bob gifted Julie a silver box	Did Bob give a golden box to Julie?
Bob gifted Julie a silver box	Was a box given to a girl?
Bob gifted Julie a silver box	Was the box black?
Bob gifted Julie a silver box	Did Julie receive a gift?
Sally paid Paul a French meal	Did Sally invite Anthony to a meal?
Sally paid Paul a French meal	Did Paul eat a French meal?

Learning Material – Experiment 2

Incidental context

Dative rule – same as Experiment 1 material

Pseudocleft rule

SENTENCE	COMPREHENSION QUESTION
Where the birds' nest is in the tree	Do the birds nest in the garage?
Where Eric and Jill are is at home	Is Jill alone in the house?
Where Helen is is in New York	Is Helen in New York?
Where Jim and Amy are is in the kitchen not in the garden	Are Jim and Amy in the garden?
Where Jane sits is on the sofa not on the stool	Was Jane sitting?
Where the children are is on the beach	Are the children at home?
Where Paula and Jack surf is at Waikiki	Do Paul and Jack surf at Ala Moana?
The milk is in the glass and the coffee is in the jar	Is there any milk?
Where Steve and Mark swim is in the pool not in the ocean	Does Steve swim in the pool?
Where Eric and Jill are is at home	Is Eric with Jill?
The letter is in the bag and the book is on the chair	Is the book on the chair?
Where the people are is in the park not in the church	Are there any people in the church?
Where Helen is is in New York	Is Helen in Miami?
The milk is in the glass and the coffee is in the jar	Is there any coffee left?
Where the children are is on the beach	Are the children in bed?
Where the President lives is in Washington not in Boston	Does the President live in Boston?
Where the cheese is is on the plate not in the basket	Is the cheese on the plate?
Where the cat sleeps is on the floor	Does the cat sleep on the floor?
The girl plays in the park and the boy plays in the yard	Were the boy and the girl at home?

Where the students meet is in the library not in the restaurant	Do the students meet in the library?
Where the children are is on the beach	Are the children on the beach?
John works in the shop and Mary works in the hospital	Is John a doctor?
The milk is in the glass and the coffee is in the jar	Are there any cereals?
Where the phone is is in the bedroom	Is there a phone in the bedroom?
Where Helen is is in New York	Is Helen in Honolulu?
Where Paula and Jack surf is at Waikiki	Does Paula surf at Waikiki?
Where the cheese is is on the plate not in the basket	Is the cheese finished?
Where Bill eats is at the table	Does Bill eat at the table?
Where the people are is in the park not in the church	Are there any people in the park?
Where Jane sits is on the sofa not on the stool	Does Jane sit on the sofa?
Where the cat sleeps is on the floor	Was the cat sleeping?
Where Jane sits is on the sofa not on the stool	Does Jane sit on the stool?
Where Eric and Jill are is at home	Is Eric alone in the house?
Where the President lives is in Washington not in Boston	Does the President live in Washington?
Where the cat sleeps is on the floor	Was the cat eating?
Where the phone is is in the bedroom	Is there a phone?
The letter is in the bag and the book is on the chair	Is the letter on the chair?
The letter is in the bag and the book is on the chair	Is the book on the bag?
Where Bill eats is at the table	Does Bill eat on the ground?
John works in the shop and Mary works in the hospital	Is Mary a scientist?
Where Jim and Amy are is in the kitchen not in the garden	Are Jim and Amy cooking?

Where the President lives is in Washington not in Boston	Does the President live in New York?
Where the phone is is in the bedroom	Is there a phone missing?
Where Sue is is in the car not in the boat	Is Sue in the boat?
Where Sue is is in the car not in the boat	Is Sue swimming?
The girl plays in the park and the boy plays in the yard	Were the boy and the girl playing?
Where Sue is is in the car not in the boat	Is Sue in the car?
Where Steve and Mark swim is in the pool not in the ocean	Does Mark swim in the pool?
Where Bill eats is at the table	Was Bill running?
The girl plays in the park and the boy plays in the yard	Were the boy and the girl playing together?
Where the cheese is is on the plate not in the basket	Is the cheese in the basket?
Where the birds' nest is in the tree	Do the birds nest in the yard?
Where Jim and Amy are is in the kitchen not in the garden	Are Jim and Amy swimming?
Where the birds' nest is in the tree	Are not the birds nesting?
John works in the shop and Mary works in the hospital	Can Mary be a doctor?
Where the students meet is in the library not in the restaurant	Do the students meet in the restaurant?
Where Steve and Mark swim is in the pool not in the ocean	Does Mark swim in the ocean?
Where the students meet is in the library not in the restaurant	Do the students hate each other?
Where the people are is in the park not in the church	Are there any people outside?

Where Paula and Jack surf is at Waikiki	Does Paula surf alone at Ala Moana?
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Incidental context

Dative rule

SENTENCE	METALINGUISTIC QUESTION
Sally pays Paul a French meal	Does the sentence use the to-object form?
Guy hands the cracked plate to the waitress	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Bill replies with a long letter to Jack	Does the sentence use the to-object form?
Guy hands the cracked plate to the waitress	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Bill replies with a long letter to Jack	Does the sentence use the to-object form?

Mary lends a car to the old woman	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Bob gives Julie a silver box	Does the sentence use the to-object form?
Mike holds the two wheels to Mark	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Sally pays Paul a French meal	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Bill replies with a long letter to Jack	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Jean offers some warm clothes to Charles	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Guy hands the cracked plate to the waitress	Does the sentence use the to-object form?
Bob gives Julie a silver box	Does the sentence use the to-object form?

Bill replies with a long letter to Jack	Does the sentence use the to-object form?
Jean offers some warm clothes to Charles	Does the sentence use the to-object form?
Guy hands the cracked plate to the waitress	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Bill replies with a long letter to Jack	Does the sentence use the to-object form?
Jean offers some warm clothes to Charles	Does the sentence use the to-object form?
Peter shows the English Teacher an excellent paper	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Bill replies with a long letter to Jack	Does the sentence use the to-object form?
Peter shows the English Teacher an excellent paper	Does the sentence use the to-object form?
Guy hands the cracked plate to the waitress	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?

Bill replies with a long letter to Jack	Does the sentence use the to-object form?
Peter shows the English Teacher an excellent paper	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Peter shows the English Teacher an excellent paper	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Peter shows the English Teacher an excellent paper	Does the sentence use the to-object form?
Bob gives Julie a silver box	Does the sentence use the to-object form?

Mary lends a car to the old woman	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Jane lends Larry an expensive ring	Does the sentence use the to-object form?
Mary lends a car to the old woman	Does the sentence use the to-object form?
Bob gives Julie a silver box	Does the sentence use the to-object form?
Nick prepares some hot coffee to Sue	Does the sentence use the to-object form?
Guy hands the cracked plate to the waitress	Does the sentence use the to-object form?
John works in the shop and Mary works in the hospital	Is a contrasting location introduced by "not" used?
Where the students meet is in the library not in the restaurant	Is a contrasting location introduced by "not" used?
Where Steve and Mark swim is in the pool not in the ocean	Is a contrasting location introduced by "not" used?
Where the students meet is in the library not in the restaurant	Is a contrasting location introduced by "not" used?
Where the people are is in the park not in the church	Is a contrasting location introduced by "not" used?
Where Paula and Jack surf is at Waikiki	Is a contrasting location introduced by "not" used?

Pseudocleft rule

SENTENCE	METALINGUISTIC QUESTION
Where the birds' nest is in the tree	Is a contrasting location introduced by "not" used?
Where Eric and Jill are is at home	Is a contrasting location introduced by "not" used?
Where Helen is is in New York	Is a contrasting location introduced by "not" used?
Where Jim and Amy are is in the kitchen not in the garden	Is a contrasting location introduced by "not" used?
Where Jane sits is on the sofa not on the stool	Is a contrasting location introduced by "not" used?
Where the children are is on the beach	Is a contrasting location introduced by "not" used?
Where Paula and Jack surf is at Waikiki	Is a contrasting location introduced by "not" used?
The milk is in the glass and the coffee is in the jar	Is a contrasting location introduced by "not" used?
Where Steve and Mark swim is in the pool not in the ocean	Is a contrasting location introduced by "not" used?

Where Eric and Jill are is at home	Is a contrasting location introduced by "not" used?
The letter is in the bag and the book is on the chair	Is a contrasting location introduced by "not" used?
Where the people are is in the park not in the church	Is a contrasting location introduced by "not" used?
Where Helen is is in New York	Is a contrasting location introduced by "not" used?
The milk is in the glass and the coffee is in the jar	Is a contrasting location introduced by "not" used?
Where the children are is on the beach	Is a contrasting location introduced by "not" used?
Where the President lives is in Washington not in Boston	Is a contrasting location introduced by "not" used?
Where the cheese is is on the plate not in the basket	Is a contrasting location introduced by "not" used?
Where the cat sleeps is on the floor	Is a contrasting location introduced by "not" used?
The girl plays in the park and the boy plays in the yard	Is a contrasting location introduced by "not" used?
Where the students meet is in the library not in the restaurant	Is a contrasting location introduced by "not" used?
Where the children are is on the beach	Is a contrasting location introduced by "not" used?
John works in the shop and Mary works in the hospital	Is a contrasting location introduced by "not" used?

The milk is in the glass and the coffee is in the jar	Is a contrasting location introduced by "not" used?
Where the phone is is in the bedroom	Is a contrasting location introduced by "not" used?
Where Helen is is in New York	Is a contrasting location introduced by "not" used?
Where Paula and Jack surf is at Waikiki	Is a contrasting location introduced by "not" used?
Where the cheese is is on the plate not in the basket	Is a contrasting location introduced by "not" used?
Where Bill eats is at the table	Is a contrasting location introduced by "not" used?
Where the people are is in the park not in the church	Is a contrasting location introduced by "not" used?
Where Jane sits is on the sofa not on the stool	Is a contrasting location introduced by "not" used?
Where the cat sleeps is on the floor	Is a contrasting location introduced by "not" used?
Where Jane sits is on the sofa not on the stool	Is a contrasting location introduced by "not" used?
Where Eric and Jill are is at home	Is a contrasting location introduced by "not" used?
Where the President lives is in Washington not in Boston	Is a contrasting location introduced by "not" used?
Where the cat sleeps is on the floor	Is a contrasting location introduced by "not" used?

Where the phone is is in the bedroom	Is a contrasting location introduced by "not" used?
The letter is in the bag and the book is on the chair	Is a contrasting location introduced by "not" used?
The letter is in the bag and the book is on the chair	Is a contrasting location introduced by "not" used?
Where Bill eats is at the table	Is a contrasting location introduced by "not" used?
John works in the shop and Mary works in the hospital	Is a contrasting location introduced by "not" used?
Where Jim and Amy are is in the kitchen not in the garden	Is a contrasting location introduced by "not" used?
Where the President lives is in Washington not in Boston	Is a contrasting location introduced by "not" used?
Where the phone is is in the bedroom	Is a contrasting location introduced by "not" used?
Where Sue is is in the car not in the boat	Is a contrasting location introduced by "not" used?
Where Sue is is in the car not in the boat	Is a contrasting location introduced by "not" used?
The girl plays in the park and the boy plays in the yard	Is a contrasting location introduced by "not" used?
Where Sue is is in the car not in the boat	Is a contrasting location introduced by "not" used?
Where Steve and Mark swim is in the pool not in the ocean	Is a contrasting location introduced by "not" used?

Where Bill eats is at the table	Is a contrasting location introduced by "not" used?
The girl plays in the park and the boy plays in the yard	Is a contrasting location introduced by "not" used?
Where the cheese is is on the plate not in the basket	Is a contrasting location introduced by "not" used?
Where the birds' nest is in the tree	Is a contrasting location introduced by "not" used?
Where Jim and Amy are is in the kitchen not in the garden	Is a contrasting location introduced by "not" used?
Where the birds' nest is in the tree	Is a contrasting location introduced by "not" used?
John works in the shop and Mary works in the hospital	Is a contrasting location introduced by "not" used?
Where the students meet is in the library not in the restaurant	Is a contrasting location introduced by "not" used?
Where Steve and Mark swim is in the pool not in the ocean	Is a contrasting location introduced by "not" used?
Where the students meet is in the library not in the restaurant	Is a contrasting location introduced by "not" used?
Where the people are is in the park not in the church	Is a contrasting location introduced by "not" used?
Where Paula and Jack surf is at Waikiki	Is a contrasting location introduced by "not" used?

Grammatical Judgment Test Material

Dative Rule

SENTENCE	CONDITION
June sends Francis a diamond necklace	grammatical
Steve steals a large cake to Amy	grammatical
Jay removes the Italian coins to Phil	grammatical
Wes gives Stan a huge bottle	grammatical
May hands the empty bucket to the farmer	grammatical
Margot donates some new books to the library	grammatical
Sadie gifts the old man a fur hat	grammatical
Ben gives Betty a velvet evening gown	grammatical
Frank provides some green tea to Jill	grammatical
Carl lends a bike to the busy girl	grammatical
George prepares John the dinner	Ungrammatical
Ann removes Suzie some money	Ungrammatical
Bruce prepares the crying baby a soapy bath	Ungrammatical
Loiuse creates the girl a nice thing	Ungrammatical
Sandy fabricates Patrick some Swiss cheese	Ungrammatical
Dave promotes Diane a relaxing holiday	Ungrammatical
Tara invites the waiter a drink	Ungrammatical
Geoff prepares Doug a black tea	Ungrammatical
Carol releases Harry a running shoe	Ungrammatical
Tom ravages the policeman his gun	Ungrammatical
Peter shows the English teacher an excellent paper	studied
Guy hands the cracked plate to the waitress	studied
Mary lends a car to the old woman	studied

Mike holds the two wheels to Mark	studied
Bill replies a long letter to Jack	studied
Nick makes some hot coffee to Sue	studied
Jane lends Larry an expensive ring	studied
Bob gifts Julie a silver box	studied
Jean offers some warm clothes to Charles	studied
Sally pays Paul a French meal	studied

Pseudocleft Rule

SENTENCE	CONDITION
The pen is in the box and the pencil is in the drawer	grammatical
Lisa reads in the bedroom and Nick reads in the living room	grammatical
Where L.A. is is in California	grammatical
Where the car is is in the driveway not on the road	grammatical
Where the apples are is in the bowl	grammatical
Where Ann and Ian are is at the movies not at the zoo	grammatical
Where Judy teaches is at the university	grammatical
Where Peter waits is by the stairs not in the café	grammatical
Where my parents vacation is in Europe	grammatical
Where Maria and Joe relax is by the pool not on the beach	grammatical
Where is Bill is in the country not in the city	Ungrammatical
Where cooks Jim is in the kitchen not in the bathroom	Ungrammatical
Where Carl writes are at a desk not on the floor	Ungrammatical

Where the soldiers fight are in Europe not in Hawaii	Ungrammatical
Where the bird is was in the sky not in the sea	Ungrammatical
Where the plane lands was in the airport not at the dock	Ungrammatical
What the King lives is in a palace not in an apartment	Ungrammatical
What the dog is is in the yard not in the house	Ungrammatical
Where the horse stands is in the field in the barn	Ungrammatical
Where Mark works is in America in Japan	Ungrammatical
The girl plays in the park and the boy plays in the yard	studied
John works in the shop and Mary works in the hospital	studied
Where Helen is is in New York	studied
Where Sue is is in the car not in the boat	studied
Where the children are is on the beach	studied
Where Jim and Amy are is in the kitchen not in the garden	studied
Where the cat sleeps is on the floor	studied
Where the President lives is in Washington not in Boston	studied
Where the birds' nest is in the tree	studied
Where Steve and Mark swim is in the pool not in the ocean	studied

Analysis without the ungrammatical sentences in natural English in the dative rule

The sentences removed from analysis were “Steve steals a large cake to Amy” and “Jay removes the Italian coins to Phil” No statistically differences were found in the analysis without these sentences.

Experiment 1

Results from the ANOVA showed a main effect of condition, $F(1, 73) = 6.75, p = .01, \mu = .02$, Participants on the intentional condition were significantly better ($M = 1.10; SD = .1$) than those on the incidental condition ($M = 0.73; SD = .1$). However, neither the main effect of time, $F(1, 73) = .61, p = .44, \mu = .002$, nor the interaction between condition and time, $F(1, 73) = .15, p = .69, \mu = .0005$, were significant.

For the role of EFs during learning, we also conducted Multiple Linear Regression analyses. As in the reported data, the analyses indicated no significant main effects of BSI, for the incidental condition, $F(1, 72) = -.275, p = .78, adjusted R^2 = -.01$.

However, for the intentional condition, BSI was a significant predictor of language learning, $F(1, 70) = 3.658, p = .039, adjusted R^2 = .04$.

Experiment 2

Results from the ANOVA indicated a significant effect of condition, $F(1, 147) = 22.43, p < .001, \mu = .1$ (intentional better than incidental), and rule, $F(1, 85) = 75.63, p < .001, \mu = .4$ (the *dative rule* showing better performance than the *pseudocleft rule*). The interaction of condition x rule was also significant, $F(1, 133) = 28.32, p < .001, \mu = .1$, this interaction indicated that participants in the intentional condition showed that the dative rule had significantly better scores ($M = 2.13; SD = .13$) than the pseudocleft rule ($M = .54; SD = .15$) ($F(1, 87) = 7.55, p < .001$). However, the higher order interaction of

condition x rule x time just reached a tendency toward significance, $F(4, 340) = 1.79, p = .1, \mu = .009$.

For the role of EFs during learning, we also conducted Multiple Linear Regression analyses. As in the reported data of the dative rule, the analyses indicated no significant main effects of BSI, for the incidental condition, $F(1, 106) = .98, p = .32, adjusted R^2 = -.0001$. Nor for the intentional condition, $F(1, 145) = .52, p = .47, adjusted R^2 = -.003$.

Results from Experiment 1 with missing values

These analyses indicated no significant main effects of BSI, for the incidental condition, $F(1, 64) = .0001, p = .99, adjusted R^2 = -.01$. However, for the intentional condition, BSI was a significant predictor of language learning, $F(1, 66) = 4.21, p = .04, adjusted R^2 = .04; \beta = 1.58, t = 2.09, p = .04$.