

## SUPPORTING INFORMATION

Table S1: Familiarization triplets used in the experiments.

<u>Experiments</u>	<u>Condition</u>	<u>Familiarization item</u>	<u>Pattern</u>
1,2	<i>AAB</i>	camel-pliers-furnish	NNV
		window-baby-scavenge	NNV
		guitar-napkin-annoy	NNV
		water-brick-carry	NNV
		apple-sand-breathe	NNV
		pliers-apple-guzzle	NNV
		baby-water-juggle	NNV
		napkin-camel-listen	NNV
		brick-guitar-come	NNV
		sand-window-bring	NNV
		carry-guzzle-window	VVN
		furnish-breathe-guitar	VVN
		annoy-bring-water	VVN
		scavenge-listen-camel	VVN
		juggle-come-pliers	VVN
		breathe-carry-napkin	VVN
		guzzle-annoy-sand	VVN
		listen-furnish-baby	VVN
		bring-juggle-brick	VVN

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		come-scavenge-apple	VVN
	<i>ABB</i>	furnish-camel-pliers	VNN
		scavenge-window-baby	VNN
		annoy-guitar-napkin	VNN
		carry-water-brick	VNN
		breathe-apple-sand	VNN
		guzzle-pliers-apple	VNN
		juggle-baby-water	VNN
		listen-napkin-camel	VNN
		come-brick-guitar	VNN
		bring-sand-window	VNN
		window-carry-guzzle	NVV
		guitar-furnish-breathe	NVV
		water-annoy-bring	NVV
		camel-scavenge-listen	NVV
		pliers-juggle-come	NVV
		napkin-breathe-carry	NVV
		sand-guzzle-annoy	NVV
		baby-listen-furnish	NVV
		brick-bring-juggle	NVV
		apple-come-scavenge	NVV
3	<i>AAB</i>	számár-kulcs-tép	NNV
		<i>donkey-key-tear</i>	
		ablak-gyerek-visz	NNV

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<i>window-child-carry</i>	
kürt-homok-ellát	NNV
<i>horn-sand-supply</i>	
viz-kendő-csipog	NNV
<i>water-scarf-beep</i>	
eper-csokor-hallgat	NNV
<i>strawberry-bouquet-listen</i>	
kulcs-viz-szeret	NNV
<i>key-water-love</i>	
gyerek-kürt-kever	NNV
<i>child-horn-mix</i>	
kendő-eper-tapsol	NNV
<i>scarf-strawberry-clap</i>	
csokor-ablak-iszik	NNV
<i>bouquet-window-drink</i>	
homok-szamar-csal	NNV
<i>sand-donkey-cheat</i>	
visz-szeret-kürt	VVN
<i>carry-love-horn</i>	
ellát-tapsol-viz	VVN
<i>supply-clap-water</i>	
tép-iszik-eper	VVN
<i>tear-drink-strawberry</i>	
csipog-csal-gyerek	VVN

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	<i>beep-cheat-child</i>	
	kever-hallgat-kendő	VVN
	<i>mix-listen-scarf</i>	
	szeret-ellát-szamár	VVN
	<i>love-supply-donkey</i>	
	szik-csipog-kulcs	VVN
	<i>drink-beep-key</i>	
	hallgat-tép-homok	VVN
	<i>listen-tear-sand</i>	
	tapsol-visz-csokor	VVN
	<i>clap-carry-bouquet</i>	
	csal-kever-ablak	VVN
	<i>cheat-mix-window</i>	
<b>ABB</b>	tép-szamár-kulcs	VNN
	<i>tear-donkey-key</i>	
	visz-ablak-gyerek	VNN
	<i>carry-window-child</i>	
	ellát-kürt-homok	VNN
	<i>supply-horn-sand</i>	
	csipog-viz-kendő	VNN
	<i>beep-water-scarf</i>	
	hallgat-eper-csokor	VNN
	<i>listen-strawberry-bouquet</i>	
	szeret-kulcs-viz	VNN

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<i>love-key-water</i>	
kever-gyerek-kürt	VNN
<i>mix-child-horn</i>	
tapsol-kendő-eper	VNN
<i>clap-scarf-strawberry</i>	
iszik-csokor-ablak	VNN
<i>drink-bouquet-window</i>	
csal-homok-szamár	VNN
<i>cheat-sand-donkey</i>	
kürt-visz-szeret	NVV
<i>horn-carry-love</i>	
viz-ellát-tapsol	NVV
<i>water-supply-clap</i>	
eper-tép-iszik	NVV
<i>strawberry-tear-drink</i>	
gyerek-csipog-csal	NVV
<i>child-beep-cheat</i>	
kendő-kever-hallgat	NVV
<i>scarf-mix-listen</i>	
szamár-szeret-ellát	NVV
<i>donkey-love-supply</i>	
kulcs-iszik-csipog	NVV
<i>key-drink-beep</i>	
homok-hallgat-tép	NVV

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		<i>sand-listen-tear</i>	
		csokor-tapsol-visz	NVV
		<i>bouquet-clap-carry</i>	
		ablak-csal-kever	NVV
		<i>window-cheat-mix</i>	
4	<i>AAB</i>	NNV triplets from Experiments 1-3	
	<i>ABB</i>	VNN triplets from Experiments 1-3	
5	<i>AAB</i>	VVN triplets from Experiments 1-3	
	<i>ABB</i>	NVV triplets from Experiments 1-3	
6	<i>AAB</i>	bear-hawk-coat	AAC
		dog-swan-shirt	AAC
		mouse-frog-hat	AAC
		duck-moose-blouse	AAC
		sheep-wasp-gown	AAC
		moose-bear-skirt	AAC
		hawk-dog-dress	AAC
		swan-mouse-robe	AAC
		wasp-duck-shawl	AAC
		frog-sheep-vest	AAC
		coat-skirt-swan	CCA
		hat-blouse-hawk	CCA
		gown-vest-dog	CCA
		robe-shirt-duck	CCA
		shawl-dress-mouse	CCA

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	shirt-shawl-bear	CCA
	blouse-coat-wasp	CCA
	dress-hat-sheep	CCA
	skirt-gown-frog	CCA
	vest-robe-moose	CCA
<i>ABB</i>	coat-bear-hawk	CAA
	shirt-dog-swan	CAA
	hat-mouse-frog	CAA
	blouse-duck-moose	CAA
	gown-sheep-wasp	CAA
	skirt-moose-bear	CAA
	dress-hawk-dog	CAA
	robe-swan-mouse	CAA
	shawl-wasp-duck	CAA
	vest-frog-sheep	CAA
	swan-coat-skirt	ACC
	hawk-hat-blouse	ACC
	dog-gown-vest	ACC
	duck-robe-shirt	ACC
	mouse-shawl-dress	ACC
	bear-shirt-shawl	ACC
	wasp-blouse-coat	ACC
	sheep-dress-hat	ACC
	frog-skirt-gown	ACC

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		moose-vest-robe	ACC
7	AAB	camel-pliers-furnish	NNV
		window-baby-scavenge	NNV
		guitar-napkin-annoy	NNV
		water-brick-carry	NNV
		apple-sand-breathe	NNV
		pliers-apple-guzzle	NNV
		baby-water-juggle	NNV
		napkin-camel-listen	NNV
		brick-guitar-come	NNV
		sand-window-bring	NNV
		modern-vulgar-window	AAN
		eager-false-guitar	AAN
		clever-fragile-water	AAN
		bizarre-vast-camel	AAN
		famous-bright-pliers	AAN
		vulgar-clever-napkin	AAN
		false-modern-sand	AAN
		fragile-famous-baby	AAN
		vast-eager-brick	AAN
		bright-bizarre-apple	AAN
	ABB	furnish-camel-pliers	VNN
		scavenge-window-baby	VNN
		annoy-guitar-napkin	VNN



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		carry-water-brick	VNN
		breathe-apple-sand	VNN
		guzzle-pliers-apple	VNN
		juggle-baby-water	VNN
		listen-napkin-camel	VNN
		come-brick-guitar	VNN
		bring-sand-window	VNN
		window-modern-vulgar	NAA
		guitar-eager-false	NAA
		water-clever-fragile	NAA
		camel-bizarre-vast	NAA
		pliers-famous-bright	NAA
		napkin-vulgar-clever	NAA
		sand-false-modern	NAA
		baby-fragile-famous	NAA
		brick-vast-eager	NAA
		apple-bright-bizarre	NAA
8	AAB	carry-guzzle-window	VVN
		furnish-breathe-guitar	VVN
		annoy-bring-water	VVN
		scavenge-listen-camel	VVN
		juggle-come-pliers	VVN
		breathe-carry-napkin	VVN
		guzzle-annoy-sand	VVN

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	listen-furnish-baby	VVN
	bring-juggle-brick	VVN
	come-scavenge-apple	VVN
	fragile-eager-furnish	AAV
	bizarre-false-scavenge	AAV
	clever-vast-annoy	AAV
	vulgar-famous-carry	AAV
	bright-modern -breathe	AAV
	eager-bizarre-guzzle	AAV
	false-vulgar-juggle	AAV
	vast-fragile-listen	AAV
	famous-bright-come	AAV
	modern-clever-bring	AAV
ABB	window-carry-guzzle	NVV
	guitar-furnish-breathe	NVV
	water-annoy-bring	NVV
	camel-scavenge-listen	NVV
	pliers-juggle-come	NVV
	napkin-breathe-carry	NVV
	sand-guzzle-annoy	NVV
	baby-listen-furnish	NVV
	brick-bring-juggle	NVV
	apple-come-scavenge	NVV
	furnish-fragile-eager	VAA

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scavenge-bizarre-false	VAA
annoy-clever-vast	VAA
carry-vulgar-famous	VAA
breathe-bright-modern	VAA
guzzle-eager-bizarre	VAA
juggle-false-vulgar	VAA
listen-vast-fragile	VAA
come-famous-bright	VAA
bring-modern-clever	VAA

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Table S2: Test pairs used in the experiments.

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<u>Experiments</u>	<u>AAB item</u>	<u>ABB item</u>
1, 2, 4, 5	egg-hair-eat	eat-egg-hair
	hair-knife-ask	ask-hair-knife
	knife-bus-die	die-knife-bus
	bus-beer-sew	sew-bus-beer
	beer-egg-bleed	bleed-beer-egg
	egg-knife-sew	sew-egg-knife
	hair-bus-bleed	bleed-hair-bus
	knife-beer-eat	eat-knife-beer
	bus-egg-ask	ask-bus-egg
	beer-hair-die	die-beer-hair
	eat-bleed-hair	hair-eat-bleed
	ask-sew-egg	egg-ask-sew
	die-eat-knife	knife-die-eat
	sew-die-bus	bus-sew-die
	bleed-ask-beer	beer-bleed-ask
	eat-sew-beer	beer-eat-sew
	ask-eat-bus	bus-ask-eat
	die-ask-hair	hair-die-ask
	sew-bleed-knife	knife-sew-bleed
	bleed-die-egg	egg-bleed-die

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3	tojás-busz-hos	hos-tojás-busz
	<i>egg-bus-bring</i>	<i>bring-egg-bus</i>
	haj-tojás-ker	ker-haj-tojás
	<i>hair-egg-ask</i>	<i>ask-hair-egg</i>
	kés-haj-túr	túr-kés-haj
	<i>knife-hair-bear</i>	<i>bear-knife-hair</i>
	busz-sőr-köt	köt-busz-sőr
	<i>bus-beer-knit</i>	<i>knit-bus-beer</i>
	sőr-kés-zokog	zokog-sőr-kés
	<i>beer-knife-weep</i>	<i>weep-beer-knife</i>
	tojás-kés-köt	köt-tojás-kés
	<i>egg-knife-knit</i>	<i>knit-egg-knife</i>
	haj-sőr-hos	hos-haj-sőr
	<i>hair-beer-bring</i>	<i>bring-hair-beer</i>
	kés-busz-ker	ker-kés-busz
	<i>knife-bus-ask</i>	<i>ask-knife-bus</i>
	busz-haj-zokog	zokog-busz-haj
	<i>bus-hair-weep</i>	<i>weep-bus-hair</i>
	sőr-tojás-túr	túr-sőr-tojás
	<i>beer-egg-bear</i>	<i>bear-beer-egg</i>
	hos-zokog-tojás	tojás-hos-zokog
	<i>bring-weep-egg</i>	<i>egg-bring-weep</i>
	ker-köt-haj	haj-ker-köt
	<i>ask-knit-hair</i>	<i>hair-ask-knit</i>

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	tür-hos-kés	kés-tür-hos
	<i>bear-bring-knife</i>	<i>knife-bear-bring</i>
	köt-tür-busz	busz-köt-tür
	<i>knit-bear-bus</i>	<i>bus-knit-bear</i>
	zokog-ker-sőr	sőr-zokog-ker
	<i>weep-ask-beer</i>	<i>beer-weep-ask</i>
	hos-ker-busz	busz-hos-ker
	<i>bring-ask-bus</i>	<i>bus-bring-ask</i>
	ker-tür-tojás	tojás-ker-tür
	<i>ask-bear-egg</i>	<i>egg-ask-bear</i>
	tür-zokog-haj	haj-tür-zokog
	<i>bear-weep-hair</i>	<i>hair-bear-weep</i>
	köt-hos-sőr	sőr-köt-hos
	<i>knit-bring-beer</i>	<i>beer-knit-bring</i>
	zokog-köt-kés	kés-zokog-köt
	<i>weep-knit-knife</i>	<i>knife-weep-knit</i>
6	ape-snake-glove	glove-ape-snake
	cow-ape-shoe	shoe-cow-ape
	eel-skunk-jeans	jeans-eel-skunk
	skunk-cow-brooch	brooch-skunk-cow
	snake-eel-scarf	scarf-snake-eel
	ape-skunk-scarf	scarf-ape-skunk
	cow-eel-glove	glove-cow-eel
	eel-ape-brooch	brooch-eel-ape

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skunk-snake-shoe	shoe-skunk-snake
snake-cow-jeans	jeans-snake-cow
shoe-jeans-eel	eel-shoe-jeans
glove-shoe-cow	cow-glove-shoe
jeans-scarf-ape	ape-jeans-scarf
brooch-glove-skunk	skunk-brooch-glove
scarf-brooch-snake	snake-scarf-brooch
shoe-scarf-skunk	skunk-shoe-scarf
glove-jeans-snake	snake-glove-jeans
jeans-brooch-cow	cow-jeans-brooch
brooch-shoe-ape	ape-brooch-shoe
scarf-glove-eel	eel-scarf-glove
egg-hair-eat	eat-egg-hair
hair-knife-ask	ask-hair-knife
knife-bus-die	die-knife-bus
bus-beer-sew	sew-bus-beer
beer-egg-bleed	bleed-beer-egg
egg-knife-sew	sew-egg-knife
hair-bus-bleed	bleed-hair-bus
knife-beer-eat	eat-knife-beer
bus-egg-ask	ask-bus-egg
beer-hair-die	die-beer-hair
odd-new-hair	hair-odd-new
new-dull-egg	egg-new-dull

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	tight-odd-knife	knife-tight-odd
	dull-thin-bus	bus-dull-thin
	thin-tight-beer	beer-thin-tight
	odd-dull-beer	beer-odd-dull
	tight-new-bus	bus-tight-new
	dull-tight-hair	hair-dull-tight
	new-thin-knife	knife-new-thin
	thin-odd-egg	egg-thin-odd
8	eat-bleed-hair	hair-eat-bleed
	ask-sew-egg	egg-ask-sew
	die-eat-knife	knife-die-eat
	sew-die-bus	bus-sew-die
	bleed-ask-beer	beer-bleed-ask
	eat-sew-beer	beer-eat-sew
	ask-eat-bus	bus-ask-eat
	die-ask-hair	hair-die-ask
	sew-bleed-knife	knife-sew-bleed
	bleed-die-egg	egg-bleed-die
	odd-new-eat	eat-odd-new
	new-dull-ask	ask-new-dull
	tight-odd-die	die-tight-odd
	dull-thin-bleed	bleed-dull-thin
	thin-tight-sew	sew-thin-tight

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odd-dull-sew

sew-odd-dull

tight-new-bleed

bleed-tight-new

dull-tight-eat

eat-dull-tight

new-thin-die

die-new-thin

thin-odd-ask

ask-thin-odd

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Table S3: Familiarization patterns used in the experiments. The items used in Experiment 6 and 7 were a subset of the items used in Experiments 1, 2, 3, and 5, played twice.

<u>Experiments</u>	<u>Condition</u>	<u>Familiarization patterns</u>
1-3	<i>AAB</i>	<i>noun-noun-verb, verb-verb-noun</i>
	<i>ABB</i>	<i>verb-noun-noun, noun-verb-verb</i>
4	<i>AAB</i>	<i>noun-noun-verb</i>
	<i>ABB</i>	<i>verb-noun-noun</i>
5	<i>AAB</i>	<i>verb-verb-noun</i>
	<i>ABB</i>	<i>noun-verb-verb</i>
6	<i>AAB</i>	<i>animal-animal-clothing</i>
	<i>ABB</i>	<i>clothing-clothing-animal</i>
7	<i>AAB</i>	<i>noun-noun-verb, adjective-adjective-noun</i>
	<i>ABB</i>	<i>verb-noun-noun, noun-adjective-adjective</i>
8	<i>AAB</i>	<i>verb-verb-noun, adjective-adjective-verb</i>
	<i>ABB</i>	<i>noun-verb-verb, verb-adjective-adjective</i>

Table S4: Test patterns used in the experiments.

<u>Experiments</u>	<u>Test patterns</u>
1-5	<i>noun-noun-verb (AAB) vs. verb-noun-noun (ABB)</i> <i>verb-verb-noun (AAB) vs. noun-verb-verb (ABB)</i>
6	<i>animal-animal-clothing (AAB) vs. clothing-animal-animal (ABB)</i> <i>clothing-clothing-animal (AAB) vs. animal-clothing-clothing (ABB)</i>
7	<i>noun-noun-verb (AAB) vs. verb-noun-noun (ABB)</i> <i>adjective-adjective-noun (AAB) vs. noun-adjective-adjective (ABB)</i>
8	<i>verb-verb-noun (AAB) vs. noun-verb-verb (ABB)</i> <i>adjective-adjective-verb (AAB) vs. verb-adjective-adjective (ABB)</i>

Table S5: Classification performance for all items in Experiment C5.

<u>Nouns</u>				<u>Verbs</u>			
<u>Word</u>	<u>%Corr.</u>	<u>Word</u>	<u>%Corr.</u>	<u>Word</u>	<u>%Corr.</u>	<u>Word</u>	<u>%Corr.</u>
apple	100	hair	100	annoy	94.1	hear	100
baby	100	idea	88.2	ask	100	juggle	88.2
beer	100	job	82.4	avoid	94.1	learn	82.4
brick	100	knife	100	beg	100	lend	100
bus	94.1	lamp	94.1	belong	100	let	94.1
cabbage	100	leg	94.1	bleed	100	listen	97.1
camel	94.1	liar	76.5	breathe	100	manage	94.1
career	100	man	100	bring	100	meet	47.1
cat	100	moon	94.1	carry	97.1	nag	100
church	100	napkin	97.1	choose	88.2	partake	100
city	100	pliers	94.1	come	97.1	ponder	100
day	100	sand	82.4	die	100	scavenge	94.1
disease	100	thing	100	dine	100	sew	94.1
door	100	town	100	eat	100	spend	94.1
egg	94.1	water	100	enter	100	sue	94.1
friend	100	window	97.1	fail	94.1	tell	94.1
garage	100	year	94.1	forbid	100	think	100
guitar	97.1			furnish	82.4	withdraw	100
				guzzle	100		