# World knowledge and definiteness in nominal bridging 

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#### Abstract

: A bridged interpretation of an NP is one in which the referent is understood to stand in some unstated relation to an entity or event previously mentioned in the discourse or text. For example, in the sequence Jane approached the house. The door was open., the NP the door is naturally interpreted as referring to a door of the just-mentioned house. In the theoretical literature, both world knowledge and formal definiteness have been identified as contributing to the construction of bridged interpretations. We present here three experiments intended to assess the relative contributions of these two factors to the likelihood of bridging, with world knowledge captured by entity-relatedness. Experiment 1, a story completion task, was inconclusive, but ultimately served as a production task providing stimuli for Experiment 2. Experiment 2, a dialog completion task, used a novel methodology to identify bridging, and showed that entity-relatedness is a significant predictor of bridging independent of definiteness. Exp. 3, a self paced reading task, used "bridge breaking" as a diagnostic of early bridging, and again showed a significant effect of entity-relatedness, as well as an interaction between definiteness and entity-relatedness in the high-related condition. These results will be of interest to researchers interested in formal and empirical models of bridging, as well as researchers interested in the function of definiteness marking.


## 1. Introduction: nominal bridging, world knowledge and definiteness

The following unremarkable example illustrates the phenomenon of bridging with which this paper is concerned:
(1) Yasmin approached the house. The door was open.

The NP (noun phrase) the door in the second sentence is naturally understood to refer to a door -- probably the main door -- of the just-mentioned house. Indeed, given just this two sentence sequence, it seems almost impossible to assign this NP any other interpretation. However, a subject NP is not necessarily or obligatorily interpreted as standing in a relation to a previously mentioned entity. Compare (1) with (2):
(2) Yasmin approached the house. The store was open.

Here, we have no inclination to posit any particular relation, or any relation at all, between the store and the previously mentioned house. Instead, we assume that the NP the store refers to some store that is supposed to be identifiable by the hearer/reader (as with the NP the house in the first sentence).

We will call the interpretation of the door in (1) a bridged interpretation. In a bridged interpretation, the interpreter infers a relation between a newly mentioned entity and some entity or event currently in their discourse model, a relation not made explicit in the discourse (cf. Asher \& Lascarides 1998, Frazier 2005, Simons \& Danks to appear) ${ }^{1}$. The question we address in this paper is, under what circumstances does a hearer assign a bridged interpretation to an NP? The contrast between (1) and (2) suggests an important role for a particular kind of world knowledge, namely, relationships between entities, whether specific tokens or, more typically, entity types or concepts. It appears that a bridged interpretation of an NP is more likely when the hearer's world knowledge provides a highly salient relation between the entity denoted by (what we will call) the bridging trigger (in (1), the door), and another recently mentioned or otherwise salient entity which serves as the anchor (in (1), the house mentioned in the first sentence). Readers of this paper have a strong expectation that houses have doors, and indeed

[^0]typically have one main door (the "front door") which is the one which visitors would usually enter by. On the other hand, there is no strong expectation of a relation between houses and stores. In other words, while the kinds of things denoted by house and door are highly related, those denoted by house and store are less related. It is plausible that this kind of relatedness has a role to play in explaining or predicting the likelihood of a bridged interpretation.

Recognition of relations between entity types is an aspect of world knowledge. In the theoretical literature on bridging, researchers are unanimous in recognizing that the hearer's world knowledge supports and constrains bridged interpretations of NPs. Clark (1975) notes that bridging inferences "though conveyed by language and a necessary part of the intended message, draw on knowledge of natural objects and events that goes beyond one's knowledge of language itself" (p.412, reprint). For Prince (1998), bridged NPs invoke "Inferrable" entities, where what can be inferred depends on "the hearer's beliefs and reasoning ability." Asher and Lascarides (1998) assume a rule, "Bridges are plausible", where plausibility reflects "common sense reasoning with world knowledge" (p.97). ${ }^{2}$

However, it is not the case that bridging is restricted to cases where the hearer already knows of a relation between the two entity types mentioned. Sometimes, it appears, there are adequate cues to bridging that lead the hearer to posit a previously unknown relation between entities. ${ }^{3}$ Consider for example:
(3) I need to get my car looked at. The cappuccino machine isn't working.

The hearer may not previously have believed that cars ever come equipped with a cappuccino machine; but this sequence strongly suggests that the cappuccino machine just mentioned is part of the speaker's car. The hearer may accommodate the new information that cars can have cappuccino machines (Lewis 1979; Stalnaker 1974), and that this particular car does. Of course, the hearer's concepts of cars and cappuccino machines need to allow that a car could have a built in cappuccino machine: to interpret example (4), it is implausible to posit that the car has a builtin ski lift.
(4) I need to get my car looked at. The ski lift isn't working.

From this brief discussion, then, we see that the interaction of bridging and world knowledge is complex. On the one hand, the hearer's world knowledge clearly bears on whether she will assign a given NP a bridged interpretation or not; (1) is naturally bridged, but (2) is not.

[^1]On the other hand, prior knowledge of a relation between two entity types is not essential for bridging to occur between them. World knowledge, specifically entity-relatedness, is the first of the two factors contributing to bridging that we investigate in the studies described below.

The second factor we will investigate is a straightforwardly linguistic feature: definiteness. In the theoretical literature on bridging, definiteness is also widely regarded as an important cue for bridging (Clark 1975, Clark and Haviland 1977, Prince 1992, Roberts 2003 i.a.). Indeed, many researchers, including those just cited, have claimed that bridging is actually triggered, under certain circumstances, by definiteness. Pairs like (5)-(6) seem to support this claim:
(5) The inside of my car is like a junk shop. The steering wheel is sitting on the dashboard.
(6) The inside of my car is like a junk shop. A steering wheel is sitting on the dashboard.

In the absence of any other context, the first interpretation that comes to mind for the definite the steering wheel in (5) is the bridged interpretation ("the steering wheel of my car"), despite the strangeness of the situation described. However, the indefinite a steering wheel in (6) inclines to a non-bridged reading ("some random detached steering wheel"). So, these examples suggest that definiteness alone can affect (the likelihood of) a bridged vs. a non-bridged reading.

One standard argument for the role of definiteness in bridging is based on the definite as a marker of Givenness (Clark 1975) or Hearer familiarity (Prince 1992). The idea is that definiteness marking on an NP signals that (the speaker believes that) the referent of the NP is familiar to and identifiable by the hearer in the context. Now let's suppose that the nonlinguistic context in which (5) is uttered provides no uniquely identifiable steering wheel. The hearer thus has a problem to solve: what specific steering wheel might the speaker have in mind that the hearer is supposed to already know about and be able to pick out uniquely in this context? The solution is to assume that the steering wheel being referred to is the (presumably unique) steering wheel of the just-mentioned car. Hence, definiteness triggers bridging. In (6), where the subject is indefinite, there is no referential problem to solve, hence no bridging.

However, the bridging data in relation to definiteness are more involved than this. Note first that the indefinite version of (1), given below in (7), is just as naturally bridged as the definite version:
(7) Yasmin approached the house. A door was open.

In (7), we again naturally understand the door in question to be a door of the house. And it is easy to generate more such examples, such as (8) and (9):
(8) Yasmin walked into the living room. A window was open.
(9) I need to take my car to a mechanic. A fuse has blown.

Although (7), (8) and (9) are all natural and interpretable, they do differ in one respect from the parallel discourses with definites in the second sentence subject position. The indefinite version of (7) at least weakly suggests that the house has more than one door, the indefinite version of (8) that the room has more than one window, and so on. In fact, in addition to implying familiarity of the referent, definites are standardly argued to give rise to an implication (typically characterized as a presupposition) that the entity in question uniquely instantiates the descriptive content of the NP in the context. (For plurals, the implication is that the intended referent includes all entities that instantiate the content in the context.) Theorists are divided as to whether the uniqueness implication is or is not independent of the familiarity implication, and which is the "core" meaning of the definite. We remain agnostic on this point. As will be seen, our studies sidestep the question of uniqueness. In order to be able to test the effect of definiteness on bridging, we construct stimuli that allow for felicity of both definites and indefinites.

The observation that indefinite NPs as well as definites may be given bridged interpretations has been made in the theoretical literature, on the basis of constructed examples such as those above (e.g., Asher \& Lascarides 1998, Kehler 2015). In the experimental literature, on the other hand, it seems to be largely taken for granted that indefinites may be bridged, modulo conflicts with non-uniqueness signaling (Frazier 2005, Clifton 2012, Schumaker 2009 i.a.). However, because the experimental literature largely takes for granted the possibility of indefinite bridging, the limits of bridging have not been explicitly tested.

We thus face the following situation: both entity-relatedness (a component of world knowledge) and definiteness (a purely linguistic feature) can contribute to the likelihood of a hearer assigning a bridged interpretation to a given NP in connected discourse. Neither is absolutely required. The development of formal models of the process of bridging is hampered by our lack of understanding of the precise circumstances in which bridging is triggered.

The studies to be described in this paper are intended to address this lacuna by exploring the relative contributions of high vs. low entity relatedness and formal definiteness vs. indefiniteness to the likelihood of a hearer assigning a bridged interpretation to a given NP. We also contribute to the literature on bridging in two additional ways. First, we provide the first systematic empirical evidence of bridging of indefinite NPs. Second, we have developed novel empirical methods for identifying bridging in experimental responses. Experiment 1 uses a story continuation task to test the effect of entity relatedness and definiteness on the rate at which an NP is assigned a bridged interpretation, as inferred by annotators of the story continuations. Experiment 2 uses a dialogue continuation task to elicit participant interpretations of a potentially bridgeable NP. Experiment 3 is a self-paced reading study testing for processing slowdowns when a potential bridge is broken. As will be described below, the data elicited in Experiment 1 was difficult to assess for the presence/absence of bridged interpretations; the
continuations ended up serving as the basis for the Experiment 2 materials. The results from both Experiment 2 and Experiment 3 confirm a large role for entity relatedness in bridging and show a smaller context-dependent role for definiteness.

## 2. Bridging in prior experimental work

In prior experimental work, NP bridging has tended to be an experimental tool, rather than the focus of investigation in its own right. In a very early, much cited study, Haviland and Clark (1974) used definite NPs (among other presupposition triggers) to test their Given-New theory of sentence comprehension. Haviland \& Clark presented participants with what they called Direct Antecedent stimuli like (10)a. or Indirect Antecedent stimuli like (10)b.
(10) a. We got some beer out of the trunk. The beer was warm.
b. We checked on the picnic supplies. The beer was warm.

Participants were asked to respond when they felt sure that they understood the second sentence. Participants responded more quickly in the Direct Antecedent case than the Indirect Antecedent case; Haviland and Clark take this as evidence that in the Indirect Antecedent case, participants are engaging in "bridge building" (inferring, e.g., that the picnic supplies included beer), accounting for the extra processing time. (An effect of mere repetition was ruled out by a separate experiment.) Interestingly, Haviland and Clark don't consider the possibility that the extra processing time might have arisen from participants failing to make an inferential link between the first and second sentence, and hence finding interpretation of the second sentence difficult. It of course seems implausible that participants would do this; however, the experiment does not offer any direct evidence of the interpretations constructed.

This turns out to be a common feature of much experimental work on NP interpretation in the decades that have followed, even though many more sophisticated measures have been developed and deployed. For example, Clifton (2012) reports a study (utilizing both reading time and eye movements) intended to investigate the effects on interpretation of the purported uniqueness/non-uniqueness implications of definite and indefinite determiners. Clifton presented participants with sets of examples such as the following:
(11) In the kitchen/appliance store, Jason checked out a/the stove very carefully.

These stimuli begin with a context phrase which includes a potential bridging anchor for the target NP introduced later in the sentence. The target is always highly related to the potential anchor (both kitchens and appliance stores typically contain stoves), but differ as to whether the scenarios invoked would typically contain single or multiple instances of the entity type described
by the target noun. Clifton assumes that the relatedness between the noun in the context phrase and the target noun will lead to a bridging attempt, regardless of the definiteness of the target NP; articles are expected to affect bridging only to the extent that their implications of (non)uniqueness may fail to match those of the context. Clifton found slower reading times in the mismatched conditions in some versions of the experiment, but, as in the earlier Haviland and Clark study, did not attempt to ascertain what interpretations participants actually arrive at for the target NPs. Clifton indeed notes that his data "cannot unambiguously determine whether the slowed reading reflected time taken to accommodate the presuppositions or simply disruption triggered by noting that presuppositions had not been met" (p. 497). So, although the experiment is designed to encourage a bridged interpretation of target NPs, it does not provide any direct evidence of the actual interpretations generated by participants.

Schumacher (2009), similarly to the current study, investigates simultaneously the effects of definiteness and entity-relatedness on NP interpretation. In her studies, she investigated the ERP signatures associated with the interpretation of definite and indefinite NPs in three conditions: repetition of a previously used noun (Given); a new noun highly related to prior context (Inferred); and an unrelated noun (New). Schumacher explored both early (N400) and later (P600) ERP effects. With respect to the N400, Schumacher found no significant effect of definiteness; on this basis, she argues that in early interpretation, hearers attempt to integrate new NPs to existing representations regardless of definiteness. With respect to the P600 component, the results are more complex but show a difference in effect between the DefiniteGiven condition, and all other conditions. This is taken to show that in all conditions other than noun repetition, participants are forced to create some new representation or to modify an existing representation.

Schumacher's results allow us to formulate the question raised by the prior work in a more precise way. She shows that in all conditions other than the Given-Definite condition, there is ERP evidence of both an attempt to integrate the new information with the existing representation and of the introduction of new or modified material. What we cannot know from this study, or from the prior work discussed here, is how participants ultimately do in fact resolve early attempts at integration (as signalled by the N4OO) with evidence of novelty: when hearers in fact bridge and when they do not. This is precisely what we explore in the experiments described below.

Our goal in what follows is to determine the role of two variables -- entity relatedness and definiteness -- in NP interpretation. We aim to discover the contribution of these variables to the likelihood of interpreters arriving at a bridged interpretation of a novel noun, rather than assuming that the noun is introducing an entity unrelated to anything previously mentioned in
the discourse ${ }^{4}$. To do this, we develop experimental methods to reliably elicit reports of interpretations given (Experiment 2 below) and to indirectly detect bridge-building (Experiment 3). We begin in the next section with a description of our initial experiment (Experiment 1), which was ultimately inconclusive but provided the groundwork for Experiments 2 and 3.

## 3. Experiment 1: Story Continuations

To test the role of entity relatedness and definiteness on bridging, our first experiment elicited story continuations using prompts consisting of a target NP that was either highly related to an NP in the context sentence, or had no relation to any previous NP (high vs low relatedness), and that varied in definiteness (definite vs indefinite), as in (12).
(12) [high, def] lan likes to work at a large desk. The chair $\qquad$
[high, indef] lan likes to work at a large desk. A chair $\qquad$
[low, def] Hilda created a nice arrangement of fruit. The chair $\qquad$
[low, indef] Hilda created a nice arrangement of fruit. A chair __

We intended to assess the resulting story continuations to determine how the NP was interpreted, as is common practice in studies that use continuation tasks to assess factors influencing the interpretation of ambiguous pronouns (e.g., Stevenson et al. 1996, Arnold 2001, Kehler et al. 2008). In such studies, annotators code each story continuation for the participant's intended referent, with an expectation that even though some cases may present coding difficulty, most are written in a way that makes clear how the referring expression has been interpreted. For passages like those in (12), our goal was to test whether the mentioned chair would be bridged to an entity mentioned in the context sentence (e.g., lan likes to work at a large desk. The chair is unfortunately much too small for it) or not (e.g., lan likes to work at a large desk. The chair at my desk would fit better at lan's desk).

## Participants

Seventy-two participants were recruited via Amazon Mechanical Turk. All participants had IP addresses in the United States or Canada and they could participate regardless of nativespeaker status (to disincentivize lying about their native language). We paid all participants (\$13 for a task estimated to take 60 minutes) but only used data from monolingual native-speaker participants who answered "no" to a question in a background questionnaire that asked whether

[^2]any language besides English was spoken at home before the age of 6 . The data for analysis comes from 54 monolingual English-speaking participants.

## Materials

The target items consisted of 40 passages with manipulations of definiteness and of the relatedness between the prompt NP and an entity mentioned late in the context sentence, as in (12). These manipulations were within participants and within items. The materials were constructed so that each NP and each context sentence appeared in all four conditions. In other words, not only did the target NP the chair appear in all 4 conditions as shown in (12), but the high-related context sentence in (12) also appeared as a low-related context sentence for another NP (Ian likes to work at a large desk. The banana...) and vice versa for the other context sentence (Hilda created a nice arrangement of fruit. The banana...). This counterbalancing was intended to ensure that any evidence for bridging in the high related condition could not be attributed to an independent effect from the context sentence that might favor linking any subsequent NP to it (maybe lan's desk is inherently more bridge-triggering than Hilda's fruit arrangement). The full set of materials is in Appendix A.

Four lists were constructed such that participants saw only one instance of any particular context sentence or NP, while also seeing an even number of items in the four conditions. Along with the 40 target sentences, each list also contained 40 fillers. These consisted of 16 items that favored coreference with a referent in the context sentence ( 8 with human referents: Neal arrived home late. He... and 8 with inanimate referents: Colleen drives a really nice car. The car...); 16 that favored coreference to an outside referent ( 8 with human referents: Tracy read a poem. Bob ... and 8 with inanimate referents: My yacht is in the harbor. My private jet...); and 8 that prompted participants with a discourse adverbial (Patrick likes sports. For example ...).

## Procedure

Participants accessed the experiment via a web-based interface linked from the Mechanical Turk environment. For all experiments reported here, participants gave informed consent before proceeding to the task. Each item was displayed on a separate page. Participants were instructed to write a natural continuation for the prompts in the supplied text box. See Appendix A for the instructions.

## Results and Discussion

Of the 2160 elicited continuations for the target items, we removed 32 that showed some misunderstanding or deviation from the standard types of responses: misinterpretation of singular/plural (Paula is going to the zoo. The lion... aren't there anymore.), unexpected gender for a named referent (Kate has just been admitted to hospital. The doctor... treats him), misinterpretation of a noun (There's an interesting piece about Africa in today's paper. A
photograph... took some breathtaking pictures.), or that were not full sentences (Hilda created a nice arrangement of fruit. A banana, some apples, and a pear.). This left 2128 continuations for the analysis with a range of 11 to 14 continuations per target NP per condition.

The annotation process was undertaken with an eye to identifying, for each continuation, whether the NP at the start of the prompt had been bridged to content in the context sentence -- specifically, did the annotator believe that the participant intended to treat the prompt NP as referring to an entity related in a specific way to some previously mentioned entity? In some cases, it was fairly easy to confirm that bridging was present (13) or absent (14).
(13) lan likes to work at a large desk. The chair ... fits nicely underneath. --> "The chair" is interpreted as being the chair at lan's desk
(14) Hilda created a nice arrangement of fruit. A chair ... was on the porch. --> "A chair" is interpreted as referring to some chair unrelated to the fruit arrangement or to Hilda's creation of it

However, in most cases, the continuation left it unclear whether or not the NP prompt was being linked specifically to an entity in the context sentence. In some cases, the same continuation appeared in multiple conditions and it became apparent that establishing consistent criteria for coding bridging would be difficult. The examples in (15) and (16) illustrate the difficulty.
(15) a. Jane was in the living room. A window was open.
--> it's easy to assume that "A window" is a window in the living room, but no evidence
b. My best friend had the most beautiful wedding. The window was open.
--> it's possible to assume that "The window" is one at the location of the wedding, but again no evidence
(16) a. Jane was in the living room. A window is very good.
b. Tania took the kids to the playground. A slide is very good.
c. Barbara was grinning from ear to ear when she walked into her classroom. The fish is very good.

When we attempted to code these, two points immediately became apparent. First, many examples were equally coherent assuming either a bridged or a non-bridged interpretation. Simple coherence, then, was not a usable criterion for coding. The second point that became apparent was that this strategy -- annotation of bridging -- merely reflected the interpretation that the annotator found most natural for the completed string. The strategy was not enabling
us to answer the question we had initially posed, namely, whether or not the participant had adopted a bridged interpretation of the prompt NP upon encountering it.

As a post-hoc analysis to replace the bridging annotation, we measured the rate of postnominal modification of the noun in the prompt. Our assumption was that a participant who immediately bridged the prompt NP to an entity mentioned in the prior sentence would consider the NP interpretation to be fully specified in the context and would feel less need for further modification of the noun; whereas a participant who did not bridge, and hence interpreted the NP prompt as referring to a brand new entity, would be more likely to offer further modification of the noun to facilitate identification.

Table 1 and Figure 1 show the rate of unmodified NPs across the four conditions. We modeled the binary outcome of modification / no-modification using a logistic mixed effects regression with fixed effects for relatedness, definiteness, and their interaction. Relatedness was coded as $-.5 /+.5$ for low/high coherence; definiteness was coded as $-.5 /+.5$ for indefinite/definite. The model contained random effects for participants and NPs with random intercepts and slopes. To achieve convergence we ended up removing random correlations and the by-participant random slope for the interaction (following Barr et al.'s (2013) approach of removing lowvariance random slopes until the model converges). The results show a main effect of relatedness whereby high-related NPs yielded more unmodified NPs than low-related NPs ( $B=2.427$, $S E=0.351, p<0.001$ ). There was no main effect of definiteness ( $B=0.052, S E=0.271, p=0.85$ ), but there was an interaction whereby definiteness had a greater impact on the proportion of unmodified NPs in the low-relatedness condition than the high-relatedness condition ( $\mathrm{B}=1.540$, $S E=0.415, \mathrm{p}<0.001$ ): For the high-related conditions (e.g., desk/chair), the proportion of unmodified NPs was nearly at ceiling, whereas for the low-related conditions (e.g., fruit/chair), the indefinite yielded more unmodified NPs than the definite. If the presence of an unmodified NP is taken as an index of bridging, this pattern goes against claims that it is the presence of a definite that triggers bridging. However, we surmise that the very lack of relatedness between a new NP and prior context may result in participants not even attempting to situate this new entity fully within their evolving mental model of the situation, hence not providing modification; if definiteness is triggering an expectation of relatedness, participants might try harder to integrate the newly mentioned entity, and to make explicit the information that would justify the use of the definite.

Table 1: Raw proportions of unmodified NPs in participants' continuations by relatedness and definiteness

|  | low | high |
| :--- | :--- | :--- |
| indef | .77 | .92 |
| def | .68 | .95 |



Figure 1: Effects of relatedness and definiteness on the absence of modification (as a proxy for bridging); error bars show standard error over by-participant means

In sum, the results from Experiment 1 are inconclusive. We did not conduct the intended analysis of bridged interpretations due to the lack of a clear metric for identifying instances of bridging. A post-hoc analysis was attempted that used the rate of modification as a proxy for bridging. The next experiment builds on Experiment 1 by using the continuations elicited here for a new task to assess where bridging occurs.

## 4. Experiment 2: "Which one?" dialogue continuations

The methodology for Experiment 2 was developed with two desiderata in mind. First, we wanted a measure of bridging that did not involve experimenter interpretations of participant responses. Second, we wanted to avoid prejudging what bridged readings were possible for a given stimulus. As explained in the introduction, we adopt a broad definition of bridging as any interpretation in which the interpreter infers a relation between a newly mentioned entity, and an entity or event currently in their discourse model. Different hearers may infer different relations. For example, given (17), one interpreter might understand the colors to be the colors of the leaves, while another might infer that Liping is looking at a broad outdoor scene and that the colors refers to the colors throughout the scene.

Liping watched the leaves falling from the trees. The colors were beautiful.

While the former reading seems more plausible, we wanted to ensure that our measure of bridging did not prejudge which inferred relations would count as bridging.

To assess the role of relatedness and definiteness on bridging while satisfying the desiderata above, we introduce a new task in which participants are asked to read a passage that contains a potentially bridged NP and to answer a question that probes how the participant in fact interpreted the NP. In this task, the question is embedded in an exchange between two speakers, as in (18).
(18) Speaker A: Ian likes to work at a large desk. The chair leans back and was quite expensive.

Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about?
Speaker A: $\qquad$

To assess bridging, we measure the degree to which participants use material from the context sentence in responding to the "which N?" prompt. Hence, "canonical" bridging responses such as the chair by lan's desk as well as responses which connect the new entity to other entities or events in the context, such as Ian's chair or his work chair, will all give positive results for bridging. Specifically, we use a measure of string similarity to test the amount of string overlap between the participant responses elicited by passages like (18), and the context sentence of the prompt (lan likes to work at a large desk). For comparison, we also measured string overlap between the participant responses and the continuation sentence containing the target NP (The chair leans back and was quite expensive). We assume that a positive response ${ }^{\sim}$ context similarity score reflects (a report of) a bridged interpretation. We do not posit a numerical boundary or cut-off for bridging, allowing that there may be degrees of bridging. The response the chair by the large desk that lan likes to work at will produce a higher similarity score than the response the one where lan sits, consistent with a sense that the former response indicates a higher degree of integration of the newly mentioned entity into the discourse -- a 'stronger' bridge -- than the latter. We used a subset of the passages elicited in Experiment 1 in order to test for effects of entity relatedness and definiteness.

## Participants

Seventy-two participants were recruited via Amazon Mechanical Turk. All participants had IP addresses in the United States or Canada. We paid all participants ( $\$ 10$ for a task estimated to take under an hour) but, as in Experiment 1, we only used data from monolingual native-speaker participants. The data for the analysis comes from 55 monolingual Englishspeaking participants.

## Materials

The target items were constructed using the context sentences from Experiment 1 and a subset of the continuations elicited in that experiment. All 40 target NPs from Experiment 1 were represented, and we chose 4 continuations that participants wrote in the high related condition and 4 written in the low related condition. We independently manipulated the definiteness of the target NP to yield a set like that shown in Table 1 for each target NP.

Table 1: Experiment 1 materials consisting of Speaker A's turn (context sentence + continuation sentence), Speaker B's question ("Wait, sorry, I wasn't listening. Which X are you talking about?", abbreviated below as "Which X?"), and the prompt to the participant to fill in Speaker A's reply

High related condition:

1. Speaker A: lan likes to work at a large desk. [The,A] chair is equally large and roomy. // Speaker B: Which chair? // Speaker A: $\qquad$
2. Speaker $A$ : lan likes to work at a large desk. [The,A] chair is also necessary //

Speaker B: Which chair? // Speaker A: $\qquad$
3. Speaker A: lan likes to work at a large desk. [The,A] chair was fitted perfectly to the desk for him. //
Speaker B: Which chair? // Speaker A: __
4. Speaker A: lan likes to work at a large desk. [The,A] chair leans back and was quite expensive.
Speaker B: Which chair? // Speaker A: $\qquad$

Low related condition:

1. Speaker A: Hilda created a nice arrangement of fruit. [The,A] chair had the fruit stacked on it for the painting. //
Speaker B: Which chair? // Speaker A: $\qquad$
2. Speaker $A$ : Hilda created a nice arrangement of fruit. [The, $A$ ] chair was not made of fruit. Speaker B: Which chair? // Speaker A: $\qquad$
3. Speaker A: Hilda created a nice arrangement of fruit. [The,A] chair was next to the arrangement. //
Speaker B: Which chair? // Speaker A: $\qquad$
4. Speaker A: Hilda created a nice arrangement of fruit. [The,A] chair had dust on it. // Speaker B: Which chair? // Speaker A: $\qquad$

Using continuations from Experiment 1 ensures that the content of the continuations is participant-generated so as to avoid experimenter bias in the readability of the high- versus lowrelated conditions. The manipulation of definiteness means that half the time, the Experiment 2 passage deviates from the Experiment 1 participants' original version (as Experiment 1 participants were responding either to a definite or an indefinite prompt). However, we note that there were over a dozen cases where the Experiment 1 data includes the same continuation in both the indefinite and definite conditions, suggesting that these continuations are amenable to a definiteness manipulation (e.g., Hilda created a nice arrangement of fruit. [The,A] banana was the centerpiece). We included those specific cases in the Experiment 2 materials.

For the rest of of the materials, we randomly selected unmodified NP continuations from the Experiment 1 dataset and then eliminated and replaced according to the following criteria: no continuations with non-referential NPs (e.g., A rug would make the room look better), no continuations with additional common ground assumptions (e.g., beforehand in The lion had attacked some people beforehand), no continuations with idiomatic expressions that require a definite (e.g., The clouds are few and far between), no continuations that sounded awkward or confusing for a native speaker (e.g., "The page was given in the mail for coupon deals at the grocery store"), and no continuations for which the definiteness manipulation produced incoherence (e.g., Some leaves are brown and some are green, which becomes contradictory if the first NP is definite as in The leaves are brown and some are green). Replacements were selected to balance the overall number of continuations that had been originally definite/indefinite in Experiment 1, and the materials for any given target NP included at least one continuation that had been elicited from an Experiment 1 definite prompt, and at least one from an Experiment 1 indefinite prompt. We fixed small typos (e.g., it's --> its, wont --> won't). The only other alteration we made to the Experiment 1 continuations was to use the/some as the definite/indefinite alternation for NPs with the target noun fish (instead of the/a); this was because almost all of the continuations with this target noun with the definite in Experiment 1 had been assigned a plural interpretation. The full set of materials is in Appendix B.

Eight lists were constructed such that participants saw each of the 40 target NPs once in a single passage (e.g., chair in one of the 8 variants in Table 1) . Each list included a particular context sentence only once (i.e., a participant who saw lan likes to work at a large desk with the target NP the chair did not see that context sentence with its low-related NP the banana). Each list contained an equal number of high-related and low-related items and an equal number of definites and indefinites. In addition to the 40 target items, each list contained 40 filler passages which were similar to the target dialogues: Speaker A's first turn consisted of two sentences; Speaker B asked a clarification question (e.g., What did you say? Why is school closed?, or Sorry, someone was talking to me. What was on the test?), and the participant needed to fill in Speaker A's reply.

## Procedure

As in Experiment 1, participants accessed the study via a web-based interface linked from the Mechanical Turk environment. Each item was displayed on a separate page. Participants were instructed to fill in the final utterance in the dialogue (see Appendix B).

## Results and Discussion

The aim of the analysis is to use a string similarity metric as a proxy for participants' assignment of a bridged interpretation. The participant responses in (19) and (20), shown underlined, illustrate the contrast we are aiming to capture. In (19), the participant is clearly linking the newly mentioned waiter to the context provided by the initial sentence; this is shown by the high overlap in content between the context sentence and the participant response. In (20), in contrast, the participant does not re-use content from the context sentence, but instead gives a rather under-informative response, simply repeating the content that is asserted in the second sentence about the NP. We take this to indicate that the participant has assigned a nonbridged interpretation to the NP -- plausibly, the participant doesn't have any clear idea of what lion is being talked about.
(19) Speaker A: Nigel and I went out last night to that new restaurant. A waiter was friendly and helpful.
Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about?
Speaker A: $\underline{\text { A waiter at that new restaurant I went to last night with Nigel }}$
(20) Speaker A: There's been a lot of controversy recently at my university. The lion was used as a mascot.

Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about?
Speaker A: The lion used as a mascot

For the string overlap measure, we compute a score for the response~context sentence overlap as a proxy for bridging. We also compute the overlap between the participant's response and the continuation sentence, with the hypothesis that in unbridged cases like (20), the best the participant can do is to reuse the information given in that sentence about the entity under discussion. (Recall that the context sentence is the first sentence of A's first utterance, and the continuation sentence is the second sentence, whose subject is the target NP.) For any pair of sentences, the similarity measure was computed by treating each sentence as a "bag of words" represented as a vector in a multi-dimensional lexical space. We then evaluated the distance between those two vectors. The bag of words for a given sentence consisted of all the words in that sentence after we excluded punctuation and stop words (e.g., that, and, was; nltk.corpus' stopwords.words("english")). We present two analyses -- one with stemmed words (e.g.,
cats/cat both appear as cat; nltk PorterStemmer) and one with lemmatized words (e.g., buy/buys/buying/bought all appear as buy; nltk WordNetLemmatizer). The distance between two sentences in this space was measured as the cosine of the angle between the two vectors. With this measure, two sentences that consist of an identical set of words have value 1 and two sentences that have no overlapping words have value 0 . Appendix $C$ includes a sample of participant responses and the associated similarity scores that were computed for the response ${ }^{\sim}$ context comparison and the response ${ }^{\sim}$ continuation comparison.

Table 2 and Figure 2 show the similarity scores between the context sentence and the participant response. As can be seen, there are higher scores for high-related NPs than lowrelated NPs, and little difference by definiteness. We construct a linear mixed effect regression to predict the similarity score with fixed effects of relatedness and definiteness and their interaction (coded as $-.5 /+.5$ low/high and $-.5 /+.5$ indefinite/definite, as in Experiment 1). The model contained random effects for participants and NPs, with random intercepts and slopes. The converging model for stemmed similarity only contained by-participants random slopes for relatedness and definiteness and a by-NP random slope of relatedness. For lemmatized similarity, the converging model contained full by-participants random effect structure but only a by-NP random slope of relatedness. The results show a significant main effect of relatedness (stemmed: $\mathrm{B}=0.147, \mathrm{SE}=0.02, \mathrm{t}=7.08$, $\mathrm{p}<0.001$; lemmatized: $\mathrm{B}=0.141, \mathrm{SE}=0.02, \mathrm{t}=6.688, \mathrm{p}<0.001$ ). There is no main effect of definiteness nor a relatedness $X$ definiteness interaction ( $p$ ' $s>0.3$ ).

Table 2: Mean similarity scores between the context sentence and the participant response (higher similarity is taken to be a proxy for bridging between the target NP and the context sentence)

| Stemmed similarity |  | Lemma similarity |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | low | high | low | high |
| indef | 0.20 | 0.36 | 0.18 | 0.33 |
| def | 0.22 | 0.35 | 0.19 | 0.32 |



Figure 2: Effects of relatedness and definiteness on two types of similarity scores (stemmed on left graph and lemmatized on right graph) between the context sentence and participant responses; error bars show standard error over by-participant means

Table 3 and Figure 3 show the similarity scores between the continuation sentence and the participant response. The similarity is again influenced by relatedness, but here we see higher scores for low coherence nouns (akin to the lion example in (20)) and also a small score increase for indefinite low-related NPs. The converging model for stemmed similarity contained only by-participants random slopes for relatedness and the relatedness $X$ definiteness interaction and a by-NP random slope of relatedness. For lemmatized similarity, the converging model contained only by-participant and by-NP random slopes for relatedness. The results show a significant main effect of relatedness whereby the continuation $\sim$ response similarity is higher for the low-related condition than the high-related condition (stemmed: $B=-0.077, \mathrm{SE}=0.016, \mathrm{t}=-$ 4.810, $p<0.001$; lemmatized: $B=-0.077, S E=0.016, t=-4.942, p<0.001$ ). There is also a less reliable effect of definiteness whereby definites have lower scores than indefinites (stemmed: $B=-$ $0.0181, \mathrm{SE}=0.009, \mathrm{t}=-2.001, \mathrm{p}<0.05$; lemmatized: $\mathrm{B}=-0.0154, \mathrm{SE}=0.09, \mathrm{t}=-1.723, \mathrm{p}=0.09$ ), which is likely driven by the significant relatedness $X$ definiteness interaction (stemmed: $B=0.052$, $S E=0.019, t=2.693, p<0.001$; lemmatized: $B=0.054, S E=0.019, t=2.894, p<0.005)$.

Table 3: Mean similarity scores between the continuation sentence and the participant response

| Stemmed similarity |  | Lemma similarity |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | low | high | low | high |
| indef | 0.41 | 0.31 | 0.40 | 0.30 |
| def | 0.37 | 0.32 | 0.37 | 0.31 |



Figure 3: Effects of relatedness and definitenes on two types of similarity scores (stemmed on left graph and lemmatized on right graph) between the continuation sentence and participant responses; error bars show standard error over by-participant means

Regarding entity relatedness, these results suggest that participants answer the "Which $N$ ?" question differently for the high related versus low related conditions. In the high-related condition, the similarity scores show that participants' responses tend to use words from the context sentence, which we interpret as a sign of bridging. In the low-related condition, the similarity scores show that participants' responses tend more to use words from the continuation sentence, which we interpret as a sign of a failure to bridge. Hence, our results appear to show that entity-relatedness is a significant factor giving rise to bridged interpretations, independent of definiteness.

However, these results do raise a question: Might high string overlap between the participant's response and the context sentence occur in the high-related condition even in the absence of bridging, simply because of the high relatedness of the target noun and its potential anchor. For example, might high overlap be driven by responses like the (non-attested) response in (21)? Here, the word restaurant is used not because the context provides it as the anchor for a bridge, but because restaurants are common places to find waiters.
(21) Speaker A: Nigel and I went out last night to that new restaurant. A waiter was friendly and helpful.
Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about?
Speaker A: A waiter at a restaurant I went to a year ago.

In order to rule out this alternative explanation for the high similarity scores between the context sentence and the response, we conducted an additional check, with the aim of
ascertaining, e.g., how often participants use restaurant in a response about a waiter, even if the context sentence doesn't contain the word restaurant. For each target noun, we checked the frequency of occurrence of the high-related anchor noun (e.g., restaurant for waiter, desk for chair, fruit for banana, room for window, wedding for guests) in responses in both the highrelated condition, in which the high-related noun occurred in the context, and in the low-related condition, which did not contain the high-related noun in the context sentence. Table 4 reports the by-condition averages of the rate of mention of the related word for each target NP

## Table 4 Proportion of mentions of the related noun in participant responses.

|  | low | high |
| :--- | :--- | :--- |
| indef | 0.09 | 0.70 |
| def | 0.08 | 0.68 |

While participants do occasionally use the related word in their responses even when it has not occurred in the context sentence (i.e., in the low-related condition where the use rates are 0.08 and 0.09 ), they do so at a much higher rate when the related word is present as a candidate anchor in the context sentence (i.e., in the high-related condition where the use rates are 0.68 and 0.70 ). Therefore, our assumption is that the mention of the related noun, which contributes to the high context ${ }^{\sim}$ response similarity in the high-related condition, likely reflects bridging rather than coincidental use of a noun from the context sentence.

The proportions in Table 4 also address another open question about our results. High context ${ }^{\sim}$ response similarity can in principle be achieved without actually mentioning a contextually given high related noun. For example, returning to our restaurant/waiter prompt, both of the (constructed, not attested) responses shown in (22) have high similarity to the context sentence, yet only the a. response utilizes the high related noun from the context sentence.
(22) Speaker A: Nigel and I went out last night to that new restaurant. A waiter was friendly and helpful.
Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about?
a. Speaker A: A waiter at that new restaurant I went to with Nigel
b. Speaker A: A waiter that Nigel and I met when we went out last night

If responses to definites and indefinites systematically varied in this way, we would have clear evidence that definiteness is affecting the way in which participants bridge. However, Table 4. shows that definiteness does not affect the rate of use of the high related noun. So, whether the target noun is definite or indefinite, a high related noun in the context sentence is equally likely to be used in constructing the response.

Finally, besides the entity relatedness findings, we saw that the continuation~response similarity scores show a marked increase for low-related NPs, and particularly for indefinites in that condition. This may suggest that a failure to bridge arises from this combination of a lack of entity relatedness and a lack of definiteness. We do note, however, that our definiteness findings should be interpreted with caution since the effect of definiteness was marginal in one analysis. In addition, the analyses we present here represent a subset of our analyses; we also conducted several other exploratory analyses (e.g., computing scores for a bag of words to which no stemming/lemmatizing was applied or in which we eliminated the target noun). Across these analyses, the effect of relatedness was robust, whereas the effect of definiteness was less so. We chose to report the current set of analyses because we believe they represent the best treatment of the data for identifying similarity (stemming, lemmatizing) and because we wanted to be conservative and allow for the possibility of an effect of definiteness, if it is present, to be recognized.

In summary, then, this experiment suggests that entity-relatedness is a significant predictor of a bridged interpretation, independent of definiteness (as shown in the response ${ }^{\sim}$ context similarity scores); low-related indefinites, though, may be the most prone to non-bridged interpretations, suggesting an interaction between the two features (as shown in the response ${ }^{\sim}$ continuation similarity scores).

In the next experiment, we specifically target non-bridging by using sentences which ensure that a potential bridge is cancelled, and we measure participants' reading times when they encounter that bridge-cancelling material.

## 5. Experiment 3: Self-paced reading

This final experiment uses a self-paced reading task to further test the contributions of entity relatedness and definiteness to bridging. We assess reading times at the point in a sentence where an invited bridge is cancelled. The prediction is that factors that support a bridging inference will increase the processing difficulty if that bridge must be cancelled. To illustrate, passage (23) invites a bridged interpretation of the window as denoting a window in the living room mentioned in the context sentence. However, that interpretation is cancelled at the descriptive relative clause (RC) that was in her dream, which specifies that the mentioned window is not in fact the one in the living room. The more a passage prior to the RC supports a bridged interpretation, the more the bridge-breaking RC content is expected to cause reading difficulty.

Jane was in the living room. The window that was in her dream suddenly came to mind.

Passage (24) uses the same context sentence as (23) but in contrast to (23), the following sentence begins with the low-related noun knife. In this case, we hypothesize that the reader will be less likely to assign a bridged interpretation when reading the knife, and hence will not experience processing difficulty when encountering the same relative clause, that was in her dream.
(24) Jane was in the living room. The knife that was in her dream suddenly came to mind.

As in Experiments 1 and 2, we manipulate both entity relatedness and definiteness.

## Participants

In order to create a dataset of 100 monolingual English-speaking participants, we recruited and paid 126 participants via Prolific (\$2.50 for a task that was estimated to take 10 minutes). All participants had indicated they were monolingual English-speaking US nationals, but 24 subsequently mentioned growing up with a non-English language at home when we asked about their language background. Those 24 were removed and replaced, as were a further 2 participants with low accuracy on the comprehension questions. With these exclusions, our target dataset consists of 100 monolingual English participants' reading times.

## Materials

The target items consisted of 40 passages that followed the structure of (23-24). We varied the relatedness and definiteness of a target noun, as in the sample item set in (25). Each item consists of a context sentence followed by a continuation sentence. The continuation sentence begins with a determiner-noun sequence followed by a restrictive relative clause. The determiner is either the or $a$. The following noun either denotes an entity that is highly related to an entity introduced by the context sentence (window/living room) or one that is unrelated to the context sentence (knife). As shown in (25), in the critical items the determiner-noun sequence was always presented without the RC, to allow for an initial reading of this sequence as a complete NP.

The example in (25) shows the chunking we used in the self-paced reading paradigm (as indicated by underscores between words in a single chunk). The context sentence was presented as a single chunk and the continuation sentence had chunks for the determiner-noun sequence, the start of the RC, the bridge-relevant content of the RC, and two or more spillover regions.
(25) Context sentence: Jane_was_in_the_living_room.
[high, def] The_window that_was_in her_dream suddenly_came to_mind.
[high, indef] A_window that_was_in her_dream suddenly_came to_mind.
[low, def] The_knife that_was_in her_dream suddenly_came to_mind.
[low, indef] A_knife that_was_in her_dream suddenly_came to_mind.

The target region (in bold) consists of the portion of the RC that identifies the referent as a brand new item, unrelated to the context sentence. If a participant had already inferred a bridge to the context sentence (e.g., assumed that the window in question was a window in the living room), then this target region would require them to revise that interpretation. For a given item, the context sentence, target, and spillover regions were the same for all conditions, and the only words that varied were the sentence-initial determiner and noun in the continuation sentence.

An additional 24 two-sentence passages were used as fillers. Of these, 8 followed the structure of the target items (context sentence, continuation-initial Det-Noun, RC) but they were set up to ensure that participants couldn't learn over the course of the experiment that potential NP bridges are always broken. In these fillers, the bridge-compatible noun at the start of the continuation sentence was always followed by a bridge-compatible RC. We also varied the chunking to help prevent participants from associating the chunking of the target items with a determiner-noun sequence and then a bridge-breaking RC. In half of the 8 fillers with RCs, the context sentence was presented in smaller chunks (to avoid Det-Noun-RC sequences only appearing after a single-chunk context sentence); in the other half, the continuation contained a Det-Noun-RC single chunk (to avoid a pattern where a single-chunk context sentence would always be followed by the separate Det-Noun and bridge-breaking RC). A further 16 fillers contained no RC. For the chunking, half of the no-RC fillers contained a single-chunk context sentence (to ensure that participants could not learn that single-chunk context sentences and sentence-initial Det-Nouns were always followed by an RC); the other half provided additional variability in the chunking patterns by presenting a multi-chunk context sentence and a singlechunk continuation. The full set of materials is in Appendix D.

## Procedure

From Prolific, participants were directed to another website hosted by IbexFarm (Drummond, 2013) for the moving window self-paced reading experiment. Passages initially appeared on the screen as a series of horizontal lines where the line length corresponded to the length of the regions. Participants revealed each subsequent region of the passage by pressing the space bar on their keyboard. Passages were presented non-cumulatively so that each newly revealed region was the only visible region on the screen.

After a quarter of the items, participants saw verification statements which they responded to by clicking on "TRUE" or "FALSE" with their cursor. They received feedback for incorrect answers only.

## Results and discussion

Figure 4 shows the raw reading times starting at the sentence-initial Det-Noun in the continuation sentence and proceeding through the two regions of the RC and then the spillover region. Of note is the slow reading times at the bridge-breaking RC region for passages with a high-related definite NP.


Figure 4: Experiment 3 reading times (ms) by condition, from the continuation sentence Det-Noun onset to the Spillover region

For the analysis, we use linear mixed-effect regression models (LMER; Baayen, Davidson and Bates, 2008), using the Ime4 package in R (Bates, Mächler, Bolker and Walker, 2015; R Core Team, 2017). Traditional analysis of reading time data involve a series of separate analyses, one for each region. However, such an approach raises the possibility of a Type I error given the nonindependence of reading times at different positions in the same sentence and the use of multiple comparisons. Instead, we first build a single large model that contains fixed factors for relatedness, definiteness, and also region. For interactions that reach significance in this large model, we conduct follow-up analyses. This latter approach limits the number of region-specific
analyses by only targeting those whose interaction reached significance in the omnibus analysis. This follows recent work on multi-window analyses (see Grüter, Takeda, Rohde and Schafer (2018) for eye-tracking data and Rohde, Futrell, \& Lucas (2021) for self-paced reading). We use maximal random effect structure as permitted by the data.

Relatedness and definiteness are coded as in Experiment 1 and 2 (-.5/+. 5 for low/high and indefinite/definite) and region uses the sentence-initial Det-Noun sequence as the reference level. Note that this coding means that an interaction between a particular region and one or more of the manipulated factors signals that the behavior of those factors at that region differs from their behavior at the Det-Noun. For example, the prediction that high relatedness supports bridging would correspond to an interaction between relatedness and the RC_break region: At the Det-Noun region, high relatedness is expected to yield faster reading times (words that are semantically related to the preceding context are typically read faster), but if high relatedness supports a bridged interpretation, then at the RC_break region, high relatednes is expected to yield slower reading times.

Table 5 shows the model output for Experiment 3. The main effect of relatedness indicates that high related entities yield faster reading times at region's reference level, i.e., at the sentence-initial Det-Noun. The three main effects of region (Region_RC, Region_RC_break, Region_Spillover) indicate that the reading times in these regions differ significantly from that at the sentence-initial NP independent of condition (faster at Region_RC, slower at Region_RC_break, and faster in Region_Spillover). As noted above, the role of region is most relevant to our research question when region interacts with one of the manipulated factors.

## (Intercept)

Definiteness
Relatedness
Region_RC
Region_RC_break
Region_Spillover
Def:Rel
Def:Region_RC
Def:Region_RC_break
Def:Region_Spill
Rel:Region_RC
Rel:Region_RC_break
Rel:Region_Spill
Def:Rel:Region_RC
Def:Rel:Region_RC_break
Def:Rel:Region_Spill

| Beta | SE |  | $t$ |
| ---: | :---: | :---: | :---: |
| $\mathbf{8 0 1 . 4 3}$ | $\mathbf{3 8 . 4 4}$ | $\mathbf{2 0 . 8 5}$ | $<0.001$ |
| -11.83 | 15.82 | -0.75 | 0.45 |
| $\mathbf{- 3 1 . 6 1}$ | $\mathbf{1 5 . 8 2}$ | $\mathbf{- 2 . 0 0}$ | $<0.05$ |
| $\mathbf{- 7 7 . 3 9}$ | $\mathbf{1 3 . 6 6}$ | $\mathbf{- 5 . 6 7}$ | $<0.001$ |
| $\mathbf{3 1 0 . 4 6}$ | $\mathbf{2 5 . 2 6}$ | $\mathbf{1 2 . 2 9}$ | $<0.001$ |
| $\mathbf{- 1 2 0 . 7 9}$ | $\mathbf{1 4 . 6 5}$ | -8.24 | $<0.001$ |
| -21.36 | 31.66 | -0.68 | 0.50 |
| 24.71 | 22.37 | 1.11 | 0.27 |
| 39.72 | 22.42 | 1.77 | 0.08 |
| 27.05 | 22.34 | 1.21 | 0.23 |
| $\mathbf{- 8 . 5 7}$ | 22.37 | -0.38 | 0.70 |
| $\mathbf{7 8 . 9 0}$ | $\mathbf{2 2 . 4 1}$ | 3.52 | $<0.001$ |
| 56.26 | $\mathbf{2 2 . 3 3}$ | $\mathbf{2 . 5 2}$ | $<0.05$ |
| 20.62 | 44.74 | 0.46 | 0.64 |
| $\mathbf{1 2 2 . 7 6}$ | $\mathbf{4 4 . 8 4}$ | $\mathbf{2 . 7 4}$ | $<0.01$ |
| 6.76 | 44.68 | 0.15 | 0.88 |

Table 5: Results of linear mixed-effect models of Experiment 3 reading time data. Boldface indicates significance.

Together, the Relatedness X Region_RC_break and Relatedness X Region_Spillover interactions show a pattern whereby high relatedness yields reading times at the RC_break and Spillover regions that are different than at the Det-Noun region, a pattern likely driven by the 3-way interaction described in the paragraph below. We conduct follow-up analyses for the Relatedness X Region_RC_break and Relatedness X Region_Spillover interactions. At the reference level Det-Noun region, we already know that high relatedness yields faster reading times than low relatedness (see Table 5: beta=-31.61, $\mathrm{SE}=15.82, \mathrm{t}=-2.00, \mathrm{p}<0.05$ ), whereas at the RC_break and Spillover regions, the high-related passages instead yield slower reading times than the low-related passages (significant at RC_break: beta= 55.38, $\mathrm{SE}=24.36, \mathrm{t}=2.27, \mathrm{p}<0.05$; marginal at Spillover: beta=20.33, $\mathrm{SE}=11.60, \mathrm{t}=1.75, \mathrm{p}=0.09$ ).

Finally, we see a Relatedness X Definiteness X Region_RC_break interaction, which can be understood to capture the slow reading time that is apparent in Figure 1 in the high-related definite condition in the RC_break region. We conduct follow-up analyses for this Relatedness X Definiteness X Region_RC_break interaction. At the reference level Det-Noun region, we already know that the interaction is not significant (Table 5: beta $=-21.36, \mathrm{SE}=31.66, \mathrm{t}=-0.68, \mathrm{p}=0.50$ ), whereas at the RC_break region, the interaction is significant (beta= $85.12, \mathrm{SE}=41.11, \mathrm{t}=2.07$, $\mathrm{p}<0.05$ ). A further follow-up of the significant RC_break interaction confirms that it is the highrelated definite condition that yields the slowest reading time. This effect is driven by the highrelated condition, where definites are slower than indefinites (beta= 67.91, $\mathrm{SE}=22.61, \mathrm{t}=3.004$, $\mathrm{p}<0.005$ ) but there is no effect of definiteness in the low-related condition (beta= -0.90 , $\mathrm{SE}=$ 18.25, $\mathrm{t}=-0.05, \mathrm{p}=0.96$ ).

In sum, this experiment tested the extent to which entity relatedness and definiteness induce bridged interpretations of an NP. We analysed reading times at a subsequent descriptive RC whose content was incompatible with a bridged interpretation. The results show that highrelated NPs are associated with processing difficulty at the point in the RC where the bridged interpretation must be canceled, and this pattern is driven by the high-related definite NPs. Thus this experiment provides further evidence that entity-relatedness is a significant factor in cuing bridging and that definiteness, while not independently triggering bridging, interacts with entityrelatedness, such that the combination of high-relatedness and definiteness provides a particularly strong cue for bridging.

General Discussion: entity relatedness and definiteness as contributors to bridging inferences

In these studies, we investigated the contributions of entity-relatedness (an aspect of world knowledge) and formal marking of definiteness to the triggering of bridged interpretations of NPs. We found that overall, entity-relatedness is a stronger predictor of bridging than definiteness; but there is an interaction between the two features, such that a definite NP referring to an entity which is highly related to one already in the hearer's discourse model is overall most likely to be bridged, while an indefinite lacking such a relation is least likely to be bridged. The studies provide clear experimental (as opposed to merely anecdotal) evidence of bridged readings of indefinite NPs, and also introduce two novel methodologies for testing for bridging: the string overlap measure and the bridge-breaking methodology.

The evidence from Experiment 2 that high-related indefinites show degrees of bridging similar to those of high-related definites poses a challenge to theories which take bridging to be triggered by definiteness (e.g., Clark 1975); and similarly to theories according to which indefiniteness is a marker of unfamiliarity, and is interpreted by hearers as signaling a new entity (e.g., Kamp 1981, Heim 1982, Prince 1992, Gundel et al 1993). At the same time, the results from Experiment 3 support the view that formal marking of definiteness provides bridging-relevant cues to which interpreters are sensitive, and which work together with the hearer's recognition of the presence or absence of plausible relationships between entities to support interpretation. This suggests that a full theoretical model of bridging must articulate more precisely what is cued by marking of definiteness, and must model how multiple cues interact.

Experiment 3 offers some indirect insight into this interaction. The results of this experiment are initially surprising in light of Experiment 2, which showed a robust effect of relatedness on bridging with no interaction with definiteness. Based on this, we had expected in Experiment 3 to see lengthened reading times at the bridge-breaking RC for all high related prompts, regardless of definiteness. Instead, we see significantly lengthened reading times for high related definites, in particular -- even though in Experiment 2, high related indefinites are as likely to receive a bridged interpretation as high related definites. One possible explanation for this is that the combination of high relatedness and definiteness leads participants to commit to a bridged interpretation relatively early in processing; in contrast, when they encounter a high related indefinite, participants may postpone commitment in the same way that they do when encountering a low related NP. If this interpretation is correct, it tells us that although indefiniteness is not an obstacle to bridging, it does not itself signal bridging. Two theoretical possibilities remain, however. One possibility is that indefiniteness, in itself, is a weak signal of novelty; but when this signal conflicts with entity relatedness, interpreters wait for further evidence before deciding which cue to follow. Alternatively, indefiniteness may simply be neutral with respect to novelty/familiarity, while entity relatedness is not a strong enough cue alone to lead interpreters to commit to a bridged reading. The self-paced reading results in Experiment 3 may also reflect that a more nuanced measure of moment-by-moment processing provides insight into differences between conditions that are concealed by offline measures, which show
only the final outcome of the interaction of multiple factors.. Whatever the ultimate solution turns out to be, the interesting differences between the results of Experiments 2 and 3 point to the need for two different kinds of data: We need both data on what interpretations hearers ultimately assign to NPs, in contexts where both bridged and non-bridged interpretations are possible (Exp. 2); and also data that is informative about the time course of bridging (where Exp. 3 is suggestive).

The results we have presented show an important role in interpretation for hearers' knowledge about relations between entities. This evidence bears not only on modeling NP interpretation, but on understanding how hearers build coherent interpretations more generally. In the broader literature on text coherence, coherence is primarily understood in terms of relations between propositions, relations such as cause, result, narration and so on (Mann \& Thompson 1987, Asher \& Lascarides 2003, Kehler 2002). Bridging, on the other hand, shows interpreters building coherence by constructing relations between entities. Asher \& Lascarides 1998 relate nominal bridging to propositional coherence, arguing that bridging occurs in order to support coherence; specifically, they propose that bridging relations are constructed where they are necessary to support a plausible coherence relation, or where the relation between the entities is implied by the most plausible coherence relation available. Certainly, nominal bridging and propositional coherence do often go hand in hand. Recall this example, repeated here from above:
(26) Nigel and I went out last night to that new restaurant. A waiter was friendly and helpful.

If $a$ waiter refers to a waiter at the restaurant just mentioned, then the second sentence stands in the Elaboration relation to the first. If $a$ waiter refers to some unrelated waiter, then it is hard to know how the second sentence might relate to the first. However, our experimental results, and in particular those of Experiment 3, show that interpreters do not typically wait for propositional information to assign an interpretation to a subject NP. Having heard a waiter, the interpreter is now ready to learn new information about a waiter at the restaurant -- even though a coherent continuation about a different waiter is possible, as in (27):
(27) ... A waiter who served us the previous week at our local Mexican place turns out to be the DJ at the new place.

What this suggests, then, is that interpreters' recognition of plausible relations between entities plays an independent role in the construction of coherent interpretations. At least in some cases, rather than waiting to hear what is being predicated and then deciding what this predicate is plausibly being predicated of, the interpreter first decides what entity is plausibly under discussion, and attaches whatever new information is given to that entity, in the absence of
conflicting cues. This picture of coherence being driven simultaneously by entity-relatedness as well as by propositional relations is one we hope to explore in future work.

## Data Accessibility Statement

All datasets and scripts for statistical analysis can be accessed here:
https://osf.io/6w7v8/?view only=dbbccc0a5d83482eb998bd17e539b409

## Ethics and Consent

All studies were reviewed and approved by the ethics boards of <removed for anonymity>.

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## Competing Interests

The author(s) has/have no competing interests to declare.

## Authors' contributions

<removed for anonymity> contributed to: conceptualization, funding acquisition, investigation, methodology, writing original draft, review, and editing. <XXXX> was responsible for formal analysis and visualization.

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## Appendix A: Experiment 1 materials and instructions

The list of target items is shown below, organised by target noun and including the context sentences that correspond to the high-related and low-related conditions. The definite/indefinite manipulation is marked on each prompt.

## Target Noun Context sentence and Determiner-Noun prompt

banana Hilda created a nice arrangement of fruit. The/A banana
Ian likes to work at a large desk. The/A banana
bone $\quad$ The doctor looked carefully at the x-ray. The/A bone
Frank was searching for his skiing clothes. The/A bone
burner There's a problem with my stove. The/A burner
I had a weird experience recently on a plane flight. The/A burner
buttons I'm really annoyed about this new shirt. The/Some buttons
Spring has finally arrived in my garden. The/Some buttons
caterer Cecily arrived at the gala dinner. The/A caterer
Abe took a look at the magazine. The/A caterer
chair Ian likes to work at a large desk. The/A chair
Hilda created a nice arrangement of fruit. The/A chair
clouds Gwen looked up at the sky. The/Some clouds
Harry really likes his preschool. The/Some clouds
desks Barbara was grinning from ear to ear when she walked into her classroom.

The/Some desks

Charles has a large table top aquarium. The/Some desks
dice $\quad$ Michael and Ray were playing their new board game. The/Some dice
I think there's a problem with my glasses. The/Some dice
doctor Kate has just been admitted to hospital. The/A doctor
Justin walked down to the stable. The/A doctor
door There were a number of people in the house. The/A door
Tonight we're going to the theatre. The/A door
fish Charles has a large table top aquarium. The/A fish
Barbara was grinning from ear to ear when she walked into her classroom. The/A fish
flight
attendant I had a weird experience recently on a plane flight. The/A flight attendant There's a problem with my stove. The/A flight attendant
flowers Spring has finally arrived in my garden. The/Some flowers
I'm really annoyed about this new shirt. The/Some flowers
girls
Harry really likes his preschool. The/Some girls
Gwen looked up at the sky. The/Some girls
glove Frank was searching for his skiing clothes. The/A glove
The doctor looked carefully at the x-ray. The/A glove
guests My best friend had the most beautiful wedding. The/Some guests
Jane was in the living room. The/Some guests
horse Justin walked down to the stable. The/A horse
Kate has just been admitted to hospital. The/A horse
hygienist Yesterday, Tony finally went to see his dentist. The/A hygienist

Stephen is coming over with the children. The/A hygienist
leaves Looking outside, Wendy saw a lovely tree. The/Some leaves
There's an interesting piece about Africa in today's paper. The/Some leaves

I'm getting a little tired of this book. The/A page

Rosie was putting the groceries away in the cupboard. The/A page
pedal Larry was coasting downhill on his bicycle. The/A pedal
Melanie was staying late in the office. The/A pedal
phone Melanie was staying late in the office. The/A phone
Larry was coasting downhill on his bicycle. The/A phone
There's an interesting piece about Africa in today's paper. The/A photograph Looking outside, Wendy saw a lovely tree. The/A photograph

There's been a lot of controversy recently at my university. The/Some professors Paula is going to the zoo. The/Some professors
report I was really shocked by something I saw yesterday on the news. The/A report
Nigel and I went out last night to that new restaurant. The/A report
I want to do something about my living room floor. The/A rug
I want to try to fix this old chair. The/A rug
sculptures Yesterday, Dan went to the museum. The/Some sculptures

Evelyn went out for a run in the park. The/Some sculptures
shelf Rosie was putting the groceries away in the cupboard. The/A shelf
I'm getting a little tired of this book. The/A shelf
slide $\quad$ Tania took the kids to the playground. The/A slide
Vincent carefully set the table. The/A slide
squirrels Evelyn went out for a run in the park. The/Some squirrels
Yesterday, Dan went to the museum. The/Some squirrels
tablecloth Vincent carefully set the table. The/A tablecloth
Tania took the kids to the playground. The/A tablecloth
tickets Tonight we're going to the theatre. The/Some tickets
There were a number of people in the house. The/Some tickets
toys Stephen is coming over with the children. The/Some toys
Yesterday, Tony finally went to see his dentist. The/Some toys
waiter $\quad$ Nigel and I went out last night to that new restaurant. The/A waiter
I was really shocked by something I saw yesterday on the news. The/A waiter
window Jane was in the living room. The/A window
My best friend had the most beautiful wedding. The/A window
writer Abe took a look at the magazine. The/A writer
Cecily arrived at the gala dinner. The/A writer

The Experiment 1 instructions were as follows:

This study consists of 80 story continuations. You will be given the first sentence of a story. Your task is to write a natural continuation to the story in the space provided.

Write the first completion that comes to mind. Don't add extra humor or creativity to the task. We are interested in the most obvious completion that occurs to you.

Please treat each item separately -- do not try to tie the different passages together into a longer story. Each numbered sentence starts a new passage so start afresh with each item. Do not go back and revise earlier continuations.

## Appendix B: Experiment 2 materials

The list of target items is shown below, organised by target noun with continuations from Experiment 1 (four from the high-related condition and four from the low-related condition). The definite/indefinite manipulation is marked on each prompt.

Target Noun Dialogue
Speaker A: Spring has finally arrived in my garden. The/Some flowers are blooming. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some flowers look beautiful. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some flowers are now in bloom. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some flowers have already begun to bloom. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some flowers are too bright. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some flowers look misshaped and are peeling off already. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some flowers are strange colors. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some flowers don't match anything I own. <br> Speaker B: Wait, sorry, I wasn't listening. Which flowers are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some buttons are too big. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some buttons already fell off. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some buttons don't align correctly. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: I'm really annoyed about this new shirt. The/Some buttons are missing. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some buttons are finally blooming <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some buttons are brown. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some buttons were found. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:

Speaker A: Spring has finally arrived in my garden. The/Some buttons were starting to sprout. <br> Speaker B: Wait, sorry, I wasn't listening. Which buttons are you talking about? <br> Speaker A:
doctor Speaker A: Kate has just been admitted to hospital. The/A doctor wants to run
a few tests. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A doctor was confused about her blood test results. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A doctor would not release her to go home. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A doctor said she needs to remove her appendix. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A doctor was attending the horse. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A doctor followed him. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A doctor was examining the horse for dehydration. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A doctor had to be called when he saw that the stable hand had collapsed. <br> Speaker B: Wait, sorry, I wasn't listening. Which doctor are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A horse was eating in its stall. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A horse was ill and needed treatment. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A horse greeted him with a neigh. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Justin walked down to the stable. The/A horse was sleeping. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A horse needs help. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A horse kicked her in the stomach. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A horse bucked her off. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: Kate has just been admitted to hospital. The/A horse kicked her. <br> Speaker B: Wait, sorry, I wasn't listening. Which horse are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A flight attendant fainted near my seat. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A flight attendant acted like she knew me. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A flight attendant told me that a plane was going to go down in the next few days. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A flight attendant cornered me by the bathroom and said some rather suggestive things. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A flight attendant politely listened to my cooking troubles. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A flight attendant is bringing me some other food. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A flight attendant shouted. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A flight attendant looked at her passengers. <br> Speaker B: Wait, sorry, I wasn't listening. Which flight attendant are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A burner is out. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? burner <br> Speaker A:

Speaker A: There's a problem with my stove. The/A burner doesn't work. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A burner keeps turning on by itself. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? <br> Speaker A:

Speaker A: There's a problem with my stove. The/A burner won't turn on. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A burner was left on in my house during a dream. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A burner would not turn on. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A burner caught on fire in the kitchen. <br> Speaker B: Wait, sorry, I wasn't listening. Which burner are you talking about? <br> Speaker A:

Speaker A: I had a weird experience recently on a plane flight. The/A burner had a malfunction. <br> Speaker B: Wait, sorry, I wasn't listening. Which
burner are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/A lion is having babies. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> lion Speaker A:

Speaker A: Paula is going to the zoo. The/A lion is the main attraction. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/A lion recently joined the zoo's lion exhibit. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/A lion saved her life once. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/A lion escaped the research facility and almost hurt someone. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/A lion was used as a mascot. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/A lion recently got out. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/A lion is better than the cheetah. <br> Speaker B: Wait, sorry, I wasn't listening. Which lion are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/Some professors have been accused of changing grades. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university.
The/Some professors have urged us not to get involved. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/Some professors are tired of it. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: There's been a lot of controversy recently at my university. The/Some professors have been buying too much class equipment lately. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/Some professors agreed that she could take the day off. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/Some professors study the animals. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/Some professors don't approve of field trips to the zoo. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A:

Speaker A: Paula is going to the zoo. The/Some professors are going as well. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br>Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A pedal broke off of the bike. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A pedal broke. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A pedal stuck and he couldn't keep his balance. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A pedal felt a little loose and needed to be tightened. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A pedal had broken off her car so she needed to wait for a friend to pick her up anyway. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A pedal was under the computer desk to help with transcriptions. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A pedal was to the metal <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A pedal had broken in the car causing her to be stranded. <br> Speaker B: Wait, sorry, I wasn't listening. Which pedal are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A phone rang. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? phone <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A phone kept ringing down the hall. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A phone started ringing from the other side of the room. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: Melanie was staying late in the office. The/A phone wouldn't stop ringing. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A phone was in his pocket. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A phone flew out of
the cyclist's pocket in front of him, but thankfully didn't hit him. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A phone fell out of his pocket. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: Larry was coasting downhill on his bicycle. The/A phone rang in his pocket. <br> Speaker B: Wait, sorry, I wasn't listening. Which phone are you talking about? <br> Speaker A:

Speaker A: The doctor looked carefully at the x-ray. The/A bone had definitely been fractured. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: The doctor looked carefully at the x-ray. The/A bone looked like it'd completely shattered. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: The doctor looked carefully at the x-ray. The/A bone was definitely broken, and would need a cast. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: The doctor looked carefully at the x-ray. The/A bone was showing that it had a fracture. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: Frank was searching for his skiing clothes. The/A bone was left in the pockets. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: Frank was searching for his skiing clothes. The/A bone had been thrown. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: Frank was searching for his skiing clothes. The/A bone was sticking out of the closet. <br> Speaker B: Wait, sorry, I wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: Frank was searching for his skiing clothes. The/A bone healed nicely so he can get back to his sport activities. <br> Speaker B: Wait, sorry, I
wasn't listening. Which bone are you talking about? <br> Speaker A:

Speaker A: Frank was searching for his skiing clothes. The/A glove was missing. <br> Speaker B: Wait, sorry, I wasn't listening. Which glove are you talking

## Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some desks were arranged in the shape of a heart. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br>Speaker A: <br> Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some desks were finally arranged in a circle the way she

wanted. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some desks were setup backwards. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some desks had moved around. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some desks were neatly organized and carefully placed so that the aquarium wouldn't knock over. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some desks are pushed together to make a stand for it. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some desks were pushed together in order to accommodate it. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some desks were pushed together to accommodate the large tank. <br> Speaker B: Wait, sorry, I wasn't listening. Which desks are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some fish have plenty of room to swim. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are fish you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some fish would feel like royalty in it. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some fish had recently died. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A:

Speaker A: Charles has a large table top aquarium. The/Some fish fit perfectly in it. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking
about? <br> Speaker A:
Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some fish had enthralled the kids from day one. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A:

Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some fish had been put in the new aquarium. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A:

Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some fish were swimming in the tank <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A:

Speaker A: Barbara was grinning from ear to ear when she walked into her classroom. The/Some fish had laid eggs. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A shelf was full of goodies for later. <br> Speaker B: Wait, sorry, I wasn't listening.

Speaker A: Rosie was putting the groceries away in the cupboard. The/A shelf suddenly collapsed from the weight of the food. <br> Speaker B: Wait, sorry, I wasn't listening. Which shelf are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A shelf squeaked <br> Speaker B: Wait, sorry, I wasn't listening. Which shelf are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A shelf collapsed and everything fell out <br> Speaker B: Wait, sorry, I wasn't listening. Which shelf are you talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A shelf fell down. <br> Speaker B: Wait, sorry, I wasn't listening. Which shelf are you talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A shelf hopefully has something more interesting on it. <br> Speaker B: Wait, sorry, I wasn't
listening. Which shelf are you talking about? <br> Speaker A:
Speaker A: I'm getting a little tired of this book. The/A shelf is dusty. <br> Speaker B: Wait, sorry, I wasn't listening. Which shelf are you talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A shelf was loaded with more books to read though. <br> Speaker B: Wait, sorry, I wasn't listening. Which shelf are you talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A page was putting me to sleep. <br>Speaker B: Wait, sorry, I wasn't listening. Which page are you page talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A page seems to have some coffee stains. <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A page takes forever to read. <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: I'm getting a little tired of this book. The/A page was ripped out <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A page was folded in half. <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A page fell off the counter and landed on the floor. <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A page was torn from the newspaper. <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: Rosie was putting the groceries away in the cupboard. The/A page was opened in the recipe book to what she was making for dinner later. <br> Speaker B: Wait, sorry, I wasn't listening. Which page are you talking about? <br> Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper. The/A photograph shows wild animals. <br> Speaker B: Wait, sorry, I wasn't listening. photograph Which photograph are you talking about? <br> Speaker A

Speaker A: There's an interesting piece about Africa in today's paper. The/A photograph is of elephants. <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper. The/A photograph shows how food is beginning to reach all regions. <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper. The/A photograph shows how nice some people can be. <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/A photograph was taken next to it. <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/A photograph reminded her of home. <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/A photograph captured the amazing color almost as well as the real thing <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/A photograph showed that the tree was there at least for fifty years. <br> Speaker B: Wait, sorry, I wasn't listening. Which photograph are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/Some leaves were orange and red. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/Some leaves were
swaying in the wind around the tree as they fell. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/Some leaves were starting to change colors. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: Looking outside, Wendy saw a lovely tree. The/Some leaves were falling off of it. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper. The/Some leaves have been discovered. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper.
The/Some leaves are changing color during different seasons. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper. The/Some leaves are falling off the trees there too early in the season. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br>Speaker A:

Speaker A: There's an interesting piece about Africa in today's paper. The/Some leaves found there can be used in a medicine to fight cancer. <br> Speaker B: Wait, sorry, I wasn't listening. Which leaves are you talking about? <br> Speaker A:

Speaker A: I want to do something about my living room floor. The/A rug got discolored and stained. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to do something about my living room floor. The/A rug keeps sliding around and folding up when being walked on. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to do something about my living room floor. The/A rug has ruined the finish on the wood, do you have any suggestions? <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker

## A:

Speaker A: I want to do something about my living room floor. The/A rug doesn't really match the decor. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A rug needs to be replaced as well. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A rug also needs to be cleaned. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A rug got caught up in the wheel and ruined it. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A rug is under it. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A leg is broken. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A leg is broken and needs to be fixed. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A leg just needs to be replaced. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: I want to try to fix this old chair. The/A leg is unstable. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br>Speaker A:

Speaker A: I want to do something about my living room floor. The/A leg broke off my table. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: I want to do something about my living room floor. The/A leg was
broken. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: I want to do something about my living room floor. The/A leg damaged the old flooring. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: I want to do something about my living room floor. The/A leg looks out of place. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A chair is equally large and roomy. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you chair talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A chair was left for him. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A chair was fitted perfectly to the desk for him. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A chair leans back and was quite expensive. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A chair had the fruit stacked on it for the painting. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A chair was not made of fruit. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A chair was next to the arrangement. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A chair had dust on it. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A banana was the centerpiece. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A banana was at the top of this arrangement. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A banana fit in perfectly. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Hilda created a nice arrangement of fruit. The/A banana was especially nice. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A banana sat next to his monitor. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A banana sat in the corner of it <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A banana looks very small on that desk. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: Ian likes to work at a large desk. The/A banana seemed small compared to how wide that desk was. <br> Speaker B: Wait, sorry, I wasn't listening. Which banana are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/Some guests were in tears the whole time. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/Some guests did get a little drunk though. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/Some guests
were there from very far away. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/Some guests remarked about what a wonderful time they had. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/Some guests were in the kitchen helping cook. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/Some guests were about to arrive. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/Some guests were in the kitchen. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/Some guests gathered around the buffet table. <br> Speaker B: Wait, sorry, I wasn't listening. Which guests are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/A window was open. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br>

Speaker A: Jane was in the living room. The/A window was open letting in the cold air. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/A window was pretty dirty, she noticed, realizing she hadn't cleaned in almost a month. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: Jane was in the living room. The/A window was busted and she needed to repair it. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/A window was painted with flowers. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/A window was huge. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/A window had a great view. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: My best friend had the most beautiful wedding. The/A window was decorated with small white roses. <br> Speaker B: Wait, sorry, I wasn't listening. Which window are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A slide was steep. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? slide <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A slide was out of commission due to loose bolts, which made the kids sad. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A slide could not be used. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A slide was constantly in use. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A slide was being shown on the projector at the conference. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A slide was cold. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A slide was busy with all the children. <br> Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A slide was flipped. <br>

Speaker B: Wait, sorry, I wasn't listening. Which slide are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A tablecloth was white lace. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking tablecloth about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A tablecloth had to be removed before dishes were placed there. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A tablecloth was neatly placed on the table. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Vincent carefully set the table. The/A tablecloth draped nicely over the large table. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A tablecloth came in handy because the park bench was filthy. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A tablecloth was laid out so they could have a picnic. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A tablecloth covered a picnic table and people were setting up for a birthday party <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Tania took the kids to the playground. The/A tablecloth was wet. <br> Speaker B: Wait, sorry, I wasn't listening. Which tablecloth are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/A hygienist cleaned his teeth. <br> Speaker B: Wait, sorry, I wasn't listening. Which
hygienist hygienist are you talking about? <br> Speaker A:
Speaker A: Yesterday, Tony finally went to see his dentist. The/A hygienist also
works in the building. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/A hygienist raved about his dental care. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/A hygienist had said he needed to. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/A hygienist always cleans their teeth. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/A hygienist will be making a housecall to see them. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/A hygienist gave them a good report. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/A hygienist is going to give a lecture on proper hygiene. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/Some toys were set up for them to play with. <br> Speaker B: Wait, sorry, I wasn't listening.
toys Which toys are you talking about? <br> Speaker A:
Speaker A: Stephen is coming over with the children. The/Some toys are on the floor for them to play with. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/Some toys will be sure to be broken. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Stephen is coming over with the children. The/Some toys are put away so they won't break them. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/Some toys were forgotten for the day. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/Some toys were scattered across the lobby floor. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/Some toys were left on the floor. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Yesterday, Tony finally went to see his dentist. The/Some toys made his son not mind the wait. <br> Speaker B: Wait, sorry, I wasn't listening. Which toys are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/Some dice were rolled to determine a winner. <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/Some dice were eight sided. <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/Some dice were six-sided. <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/Some dice were used to play. <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/Some dice hit the lens. <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/Some dice are out of focus <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/Some dice look blurry to me right now <br> Speaker B: Wait, sorry, I wasn't listening. Which
dice are you talking about? <br> Speaker A:
Speaker A: I think there's a problem with my glasses. The/Some dice are hard to read. <br> Speaker B: Wait, sorry, I wasn't listening. Which dice are you talking about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/A lens has cracked. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking
lens about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/A lens keeps popping out of the frames when I look down. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/A lens looks warped. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: I think there's a problem with my glasses. The/A lens is all scratched up. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/A lens was required to play it properly. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/A lens was red. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/A lens was provided so they could zoom in on the board to find the clues. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: Michael and Ray were playing their new board game. The/A lens popped out of the box and they couldn't find it, though. <br> Speaker B: Wait, sorry, I wasn't listening. Which lens are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/A door was
door open. <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you
talking about? <br> Speaker A:
Speaker A: There were a number of people in the house. The/A door was left open. <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/A door never stayed closed <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/A door is always being left open <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/A door will be left open and we can sneak in. <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/A door will open at 7 pm . <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/A door is open and the line is long. <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/A door was marked at the entrance. <br> Speaker B: Wait, sorry, I wasn't listening. Which door are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/Some tickets cost 4 dollars <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking

Speaker A: Tonight we're going to the theatre. The/Some tickets were already purchased. <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/Some tickets were offered at a discount to team members <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: Tonight we're going to the theatre. The/Some tickets were cheap.
<br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/Some tickets were arranged for everyone to go together. <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/Some tickets were higher priced than others. <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/Some tickets weren't completely sold out. <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: There were a number of people in the house. The/Some tickets were sold earlier in the day. <br> Speaker B: Wait, sorry, I wasn't listening. Which tickets are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A report said that a new political scandal was happening. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> report Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A report said that a gorilla had broken out of its enclosure and went mad, attacking everyone. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A report showed that concerns about coronovirus are founded. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A report indicated that some teenagers had robbed an old lady nearby. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A report suggested it. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A report was a success. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A report gave it five out of five stars. <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A report was then filed <br> Speaker B: Wait, sorry, I wasn't listening. Which report are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A waiter was very friendly. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter waiter are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A waiter welcomed us and took our order. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A waiter was friendly and helpful. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: Nigel and I went out last night to that new restaurant. The/A waiter recommended the best entree. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A waiter suddenly went on racist rant and it was all caught on video. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A waiter punched the customer in the face. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news. The/A waiter poisoned the food <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: I was really shocked by something I saw yesterday on the news.

The/A waiter stole a customer's credit card. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some girls are very kind. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some girls are mean to him. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some girls think he's cute. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some girls are really nice to him. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Gwen looked up at the sky. The/Some girls walked by her. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Gwen looked up at the sky. The/Some girls talked about what they saw in the clouds. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Gwen looked up at the sky. The/Some girls like to find shapes in the clouds. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br>Speaker A:

Speaker A: Gwen looked up at the sky. The/Some girls then looked up at the sky as well. <br> Speaker B: Wait, sorry, I wasn't listening. Which girls are you talking about? <br> Speaker A:

Speaker A: Gwen looked up at the sky. The/Some clouds were dark and it looked like it was going to rain <br> Speaker B: Wait, sorry, I wasn't listening. clouds Which clouds are you talking about? <br> Speaker A:

Speaker A: Gwen looked up at the sky. The/Some clouds looked like marshmallows. <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds
are you talking about? <br> Speaker A:
Speaker A: Gwen looked up at the sky. The/Some clouds were rolling in. <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds are you talking about? <br> Speaker A:

Speaker A: Gwen looked up at the sky. The/Some clouds formed interesting shapes <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some clouds were drawn on the walls. <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some clouds are parting and the sun is coming out. <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some clouds formed in the sky. <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds are you talking about? <br> Speaker A:

Speaker A: Harry really likes his preschool. The/Some clouds were really fluffy today. <br> Speaker B: Wait, sorry, I wasn't listening. Which clouds are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some sculptures were beautiful. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some sculptures inspired him. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some sculptures were made in the 1700s. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some sculptures were almost finished. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some sculptures were
very intriguing to her today. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some sculptures looked nice under the maple trees. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some sculptures were covered with bird poo. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some sculptures were being put up for the art show. <br> Speaker B: Wait, sorry, I wasn't listening. Which sculptures are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some squirrels were playing in the trees. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels squirrels are you talking about? <br> Speaker $A$ :

Speaker A: Evelyn went out for a run in the park. The/Some squirrels ran across the path and startled her. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some squirrels were seen climbing the tree. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Evelyn went out for a run in the park. The/Some squirrels went to her and ate the food in her hand. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some squirrels were very active outside of the museum, preparing for winter. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some squirrels were running up the tree with a lot of acorns in their cheeks, which he found funny. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some squirrels were
outside running around. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Yesterday, Dan went to the museum. The/Some squirrels were burying their nuts for the upcoming winter. <br> Speaker B: Wait, sorry, I wasn't listening. Which squirrels are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A writer was one whose work he was familiar with. <br> Speaker B: Wait, sorry, I wasn't listening.
writer
terer

Which writer are you talking about? <br> Speaker A:
Speaker A: Abe took a look at the magazine. The/A writer had created an excellent article. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A writer had an article in it that he wanted to read. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A writer had written an interesting article. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A writer said she was dressed beautifully. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A writer was seen in the corner writing a story. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A writer was already at her table. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A writer was waiting on her to hear the story. <br> Speaker B: Wait, sorry, I wasn't listening. Which writer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A caterer busily carried some plates. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you
talking about? <br> Speaker A:
Speaker A: Cecily arrived at the gala dinner. The/A caterer prepared an excellent meal. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A caterer gave her the menu. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

Speaker A: Cecily arrived at the gala dinner. The/A caterer underestimated the number of guests. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A caterer told him to read while the food was getting prepared. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A caterer then came over and asked if he found anything he liked. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A caterer told him to put it down and serve the wine. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

Speaker A: Abe took a look at the magazine. The/A caterer was featured. <br> Speaker B: Wait, sorry, I wasn't listening. Which caterer are you talking about? <br> Speaker A:

The Experiment 2 instructions were as follows:

You are going to read a series of short conversations that end with someone asking for clarification. You will need to fill in what you imagine might be said next. Please imagine these conversations are happening over the phone so the speakers can't clarify by pointing or gesturing.

Write the first completion that comes to mind. Don't add extra humor or creativity to the task. We are interested in the most obvious completion that occurs to you.

There is no right answer for most items. However, there are a few interspersed, unidentified items for which there are correct answers. We will be watching to see how you perform on these. These items are easy: if you read carefully, you are sure to get these right!

Please treat each item separately -- do not try to tie the different passages together into a longer story. Each numbered sentence starts a new passage so start afresh with each item. Do not go back and revise earlier continuations.

## Appendix C: Experiment 2 similarity scores for sample participant responses

The table below shows a dozen participant responses extracted from the Experiment 2 data to illustrate the range of responses and their similarity scores. The scores for stemmed similarity and lemmatized similarity are separated by '/'.

## response ${ }^{\sim}$ context response ${ }^{\sim}$ continuation scores scores

## Dialogue

Speaker A: Nigel and I went out last night to that new restaurant. A waiter was very friendly. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A: The one at the new restaurant Nigel went to last night

Speaker A: Nigel and I went out last night to that new restaurant. A waiter was friendly and helpful. <br> Speaker B: Wait, sorry, I wasn't listening. Which waiter are you talking about? <br> Speaker A: A waiter at that new restaurant I went to last night with Nigel.

Speaker A: Paula is going to the zoo. Some professors are going as well. <br> Speaker B: Wait, sorry, I wasn't listening. Which professors are you talking about? <br> Speaker A: Some professors that are going to the zoo with paula
0.00/0.00
0.92/0.92
.00/0.00
0.87/0.87
0.58/0.58

Speaker A: Michael and Ray were playing their new board game. A lens was required to play it properly. <br> Speaker B: Wait, sorry, I wasn't listening.
Which lens are you talking about? <br> Speaker A: The lens is to help Michael and Ray play their new board game properly. $\quad 0.82 / 0.68 \quad 0.50 / 0.50$

Speaker A: I want to try to fix this old chair. The rug is under it. <br> Speaker B: Wait, sorry, I wasn't listening. Which rug are you talking about? <br> Speaker A: The rug under the old chair. 0.58/0.58 0.52/0.52

Speaker A: Charles has a large table top aquarium. The fish fit perfectly in it. <br> Speaker B: Wait, sorry, I wasn't listening. Which fish are you talking about? <br> Speaker A: Charles's fish! 0.00/0.32 0.41/0.41

Speaker A: Rosie was putting the groceries away in the cupboard. The shelf was full of goodies for later. <br> Speaker B: Wait, sorry, I wasn't listening.
Which shelf are you talking about? <br> Speaker A:
The shelves that are used to store the groceries.
0.22/0.22
0.00/0.25

Speaker A: Yesterday, Tony finally went to see his dentist. The hygienist raved about his dental care. <br> Speaker B: Wait, sorry, I wasn't listening. Which hygienist are you talking about? <br> Speaker A: The hygienist at the dental clinic Tony $\begin{array}{lll}\text { visited. } & 0.18 / 0.18 & 0.45 / 0.45\end{array}$

Speaker A: Hilda created a nice arrangement of fruit. The chair was not made of fruit. <br> Speaker B: Wait, sorry, I wasn't listening. Which chair are you talking about? <br> Speaker A: A chair in the living room. It wasn't made of fruit.

Speaker A: I want to do something about my living room floor. A leg damaged the old flooring. <br> Speaker B: Wait, sorry, I wasn't listening. Which leg are you talking about? <br> Speaker A: The leg that damaged the old flooring

## Appendix D: Experiment 3 materials

Jane_was_in_the_living_room. \n The_window that_was_in her_dream suddenly_came
1 to_mind.
Jane_was_in_the_living_room. \n A_window that_was_in her_dream suddenly_came to_mind.

Jane_was_in_the_living_room. \n The_knife that_was_in her_dream suddenly_came to_mind.

Jane_was_in_the_living_room. \n A_knife that_was_in her_dream suddenly_came to_mind.

My_best_friend_had_the_most_unique_wedding. \n The_bridesmaid that_was_in
2 a_brochure_for_the_wedding_venue had_given her_the_idea \n for_the_color_scheme.
My_best_friend_had_the_most_unique_wedding. \n A_bridesmaid that_was_in a_brochure_for_the_wedding_venue had_given her_the_idea \n for_the_color_scheme.

My_best_friend_had_the_most_unique_wedding. \n The_ladybug that_was_in
a_brochure_for_the_wedding_venue had_given her_the_idea \n for_the_color_scheme.
My_best_friend_had_the_most_unique_wedding. \n A_ladybug that_was_in a_brochure_for_the_wedding_venue had_given her_the_idea \n for_the_color_scheme.

Barbara_was_grinning_from_ear_to_ear_when_she_walked_into_her_classroom. \n The_desks that_were_in a_magazine_that_she_had_just_seen were_exactly

3 what_she_wanted.
Barbara_was_grinning_from_ear_to_ear_when_she_walked_into_her_classroom. \n Some_desks that_were_in a_magazine_that_she_had_just_seen were_exactly what_she_wanted.

Barbara_was_grinning_from_ear_to_ear_when_she_walked_into_her_classroom. \n The_shoes that_were_in a_magazine_that_she_had_just_seen were_exactly what_she_wanted.

Barbara_was_grinning_from_ear_to_ear_when_she_walked_into_her_classroom. \n Some_shoes that_were_in a_magazine_that_she_had_just_seen were_exactly what_she_wanted.

Charles_has_a_large_table_top_aquarium. \n The_coral that_was_in
4 a_TV_show_he_had_seen was_just the_same_color as_his_fish.

Charles_has_a_large_table_top_aquarium. \n Some_coral that_was_in a_TV_show_he_had_seen was_just the_same_color as_his_fish.

Charles_has_a_large_table_top_aquarium. \n The_jewel that_was_in a_TV_show_he_had_seen was_just the_same_color as_his_fish.

Charles_has_a_large_table_top_aquarium. \n The_jewel that_was_in a_TV_show_he_had_seen was_just the_same_color as_his_fish.

I_want_to_try_to_fix_this_old_chair. \n The_leg that_was_in the_store is_probably 5 what_I_need for_the_job.

I_want_to_try_to_fix_this_old_chair. \n A_leg that_was_in the_store is_probably what_I_need for_the_job.

I_want_to_try_to_fix_this_old_chair. \n The_glue_gun that_was_in the_store is_probably what_I_need for_the_job.

I_want_to_try_to_fix_this_old_chair. \n A_glue_gun that_was_in the_store is_probably what_I_need for_the_job.

I_want_to_do_something_about_my_living_room_floor. \n The_rug that_was_in
the_newspaper got_me thinking_about fixing_things_up.
I_want_to_do_something_about_my_living_room_floor. \n A_rug that_was_in the_newspaper got_me thinking_about fixing_things_up.

I_want_to_do_something_about_my_living_room_floor. \n The_decorator that_was_in the_newspaper got_me thinking_about fixing_things_up.

I_want_to_do_something_about_my_living_room_floor. \n A_decorator that_was_in the_newspaper got_me thinking_about fixing_things_up.

Hilda_created_a_nice_arrangement_of_fruit. \n The_banana that_was_in
7 her_son's_picture_book inspired_her with_its_bright_color.
Hilda_created_a_nice_arrangement_of_fruit. \n A_banana that_was_in her_son's_picture_book inspired_her with_its_bright_color.

Hilda_created_a_nice_arrangement_of_fruit. \n The_diamond that_was_in her_son's_picture_book inspired_her yesterday.

Hilda_created_a_nice_arrangement_of_fruit. \n A_diamond that_was_in her_son's_picture_book inspired_her yesterday.
lan_likes_to_work_at_a_large_desk. \n The_drawer that_is_in his_bedroom_bureau
8 is_where he_keeps his_private_documents,_though.
lan_likes_to_work_at_a_large_desk. \n A_drawer that_is_in his_bedroom_bureau is_where he_keeps his_private_documents,_though.
lan_likes_to_work_at_a_large_desk. \n The_safe that_is_in his_bedroom_bureau is_where he_keeps his_private_documents,_though.
lan_likes_to_work_at_a_large_desk. \n A_safe that_is_in his_bedroom_bureau is_where he_keeps his_private_documents,_though.

Kate_has_just_been_admitted_to_hospital. \n The_doctor that_was_in her_dream

Kate_has_just_been_admitted_to_hospital. \n A_doctor that_was_in her_dream spoke_to her and_told_her to_go_get_checked_out.

Kate_has_just_been_admitted_to_hospital. \n The_snake that_was_in her_dream spoke_to her and_told_her to_go_get_checked_out.

Kate_has_just_been_admitted_to_hospital. \n A_snake that_was_in her_dream spoke_to her and told_her to_go_get_checked_out.

Justin_walked_down_to_the_stable. \n The_horse that_was_in
a_book_he_had_left_there needed_to be_saved from_a_terrible_fate.
Justin_walked_down_to_the_stable. \n A_horse that_was_in a_book_he_had_left_there needed_to be_saved from_a_terrible_fate.

Justin_walked_down_to_the_stable. \n The_receipt that_was_in
a_book_he_had_left_there needed_to be_saved for_tax_purposes.
Justin_walked_down_to_the_stable. \n A_receipt that_was_in a_book_he_had_left_there needed_to be_saved for_tax_purposes.

There's_a_problem_with_my_stove. \n The_burner that_is_in the_basement might_be
11 useful for_fixing_it.
There's_a_problem_with_my_stove. \n A_burner that_is_in the_basement might_be useful for_fixing_it.

There's_a_problem_with_my_stove. \n The_iron that_is_in the_basement might_be useful for_fixing_it.

There's_a_problem_with_my_stove. \n An_iron that_is_in the_basement might_be useful for_fixing_it.

I_had_a_weird_experience_recently_on_a_plane_flight. \n The_steward that_was_on
12 the_cover_of_the_in-flight_magazine was_actually on_the_plane.

I_had_a_weird_experience_recently_on_a_plane_flight. \n A_steward that_was_on the_cover_of_the_in-flight_magazine was_actually on_the_plane.

I_had_a_weird_experience_recently_on_a_plane_flight. \n The_mailbox that_was_on the_cover_of_the_in-flight_magazine was_actually on_the_plane.

I_had_a_weird_experience_recently_on_a_plane_flight. \n A_mailbox that_was_on the_cover_of_the_in-flight_magazine was_actually on_the_plane.

I'm_really_annoyed_about_this_new_shirt. \n The_fabric that_was_in the_adjacent_store would_make a_much_nicer_shirt than_this!

I'm_really_annoyed_about_this_new_shirt. \n A_fabric that_was_in the_adjacent_store would_make a_much_nicer_shirt than_this!

I'm_really_annoyed_about_this_new_shirt. \n The_tent that_was_in the_adjacent_store would_make a_much_nicer_shirt than_this!

I'm_really_annoyed_about_this_new_shirt. \n A_tent that_was_in the_adjacent_store would_make a_much_nicer_shirt than_this!

Spring_has_finally_arrived_in_my_garden. \n The_rosebush that_was_in my_mother's_gardening_magazine is_now top_of_my_wishlist.

Spring_has_finally_arrived_in_my_garden. \n A_rosebush that_was_in my_mother's_gardening_magazine is_now top_of_my_wishlist.

Spring_has_finally_arrived_in_my_garden. \n The_diagram that_was_in my_mother's_gardening_magazine is_now giving_me some_good_ideas \n for_planting.

Spring_has_finally_arrived_in_my_garden. \n A_diagram that_was_in my_mother's_gardening_magazine is_now giving_me some_good_ideas $\backslash n$ for_planting.

Larry_was_coasting_downhill_on_his_bicycle. \n The_pedal that_was_in his_pocket was_in danger_of_falling_out.

Larry_was_coasting_downhill_on_his_bicycle. \n A_pedal that_was_in his_pocket was_in danger_of_falling_out.

Larry_was_coasting_downhill_on_his_bicycle. \n The_harmonica that_was_in his_pocket was_in danger_of_falling_out.

Larry_was_coasting_downhill_on_his_bicycle. \n A_harmonica that_was_in his_pocket was_in danger_of_falling_out.

Melanie_was_staying_late_in_the_office. \n The_phone that_she_needed to_buy

Melanie_was_staying_late_in_the_office. \n A_phone that_she_needed to_buy was_going on_sale_at_midnight.

Melanie_was_staying_late_in_the_office. \n The_doll that_she_needed to_buy was_going on_sale_at_midnight.

Melanie_was_staying_late_in_the_office. \n A_doll that_she_needed to_buy was_going on_sale_at_midnight.

Nigel_and_I_went_out_last_night_to_that_new_restaurant. \n The_waiter that_was_in 17 the_movie_we_watched_last_night was_still on_our_minds.

Nigel_and_I_went_out_last_night_to_that_new_restaurant. \n A_waiter that_was_in the_movie_we_watched_last_night was_still on_our_minds.

Nigel_and_I_went_out_last_night_to_that_new_restaurant. \n The_bear that_was_in the_movie_we_watched_last_night was_still on_our_minds.

Nigel_and_I_went_out_last_night_to_that_new_restaurant. \n A_bear that_was_in the_movie_we_watched_last_night was_still on_our_minds.

I_was_really_shocked_by_something_I_saw_yesterday_on_the_news. \n The_report
18 that_my_company evaluated turned_out to_be_completely_faked.
I_was_really_shocked_by_something_I_saw_yesterday_on_the_news. \n A_report that_my_company evaluated turned_out to_be_completely_faked.

I_was_really_shocked_by_something_I_saw_yesterday_on_the_news. \n The_vaccine that_my_company evaluated turned_out to_be_ineffective.

I_was_really_shocked_by_something_I_saw_yesterday_on_the_news. \n A_vaccine that_my_company evaluated turned_out to_be_ineffective.

There's_been_a_lot_of_controversy_recently_at_my_university. \n The_professors
19 that_are_employees at_another_institution are_attempting to_sue.
There's_been_a_lot_of_controversy_recently_at_my_university. \n Some_professors that_are_employees at_another_institution are_attempting to_sue.

There's_been_a_lot_of_controversy_recently_at_my_university. \n The_acrobats that_are_employees at_another_institution are_attempting to_sue.

There's_been_a_lot_of_controversy_recently_at_my_university. \n Some_acrobats that_are_employees at_another_institution are_attempting to_sue.

Paula_is_going_to_the_zoo. \n The_lion that_was_in yesterday's_newspaper made_her 20 think_of_it.

Paula_is_going_to_the_zoo. \n A_lion that_was_in yesterday's_newspaper made_her think_of_it.

Paula_is_going_to_the_zoo. \n The_letter that_was_in yesterday's_newspaper made_her think_of_it.

Paula_is_going_to_the_zoo. \n A_letter that_was_in yesterday's_newspaper made_her think_of_it.

I_think_there's_a_problem_with_my_glasses. \n The_lens that_is_in this_old_camera
21 is_totally better_at_bringing things_into_focus \n than_this_old_pair_of_glasses I_have.
I_think_there's_a_problem_with_my_glasses. \n A_lens that_is_in this_old_camera is_totally better_at_bringing things_into_focus \n than_this_old_pair_of_glasses I_have.

I_think_there's_a_problem_with_my_glasses. \n The_battery that_is_in this_old_camera is_totally dead \n but_I_can't manage_to_read what_kind_of_battery it_is.

I_think_there's_a_problem_with_my_glasses. \n A_battery that_is_in this_old_camera is_totally dead \n but_I_can't manage_to_read what_kind_of_battery it_is.

Michael_and_Ray_were_playing_their_new_board_game. \n The_dice that_were_in the_cartoon_they_watched_yesterday had_been magic_dice, \n and_it_made_them_wish
22 they_could_cast magical_spells.
Michael_and_Ray_were_playing_their_new_board_game. \n Some_dice that_were_in the_cartoon_they_watched_yesterday had_been magic_dice, \n and_it_made_them_wish they_could_cast magical_spells.

Michael_and_Ray_were_playing_their_new_board_game. \n The_mice that_were_in the_cartoon_they_watched_yesterday had_been gambling \n and_so Michael_and_Ray decided_to_wager a_bit_of_money on_the_board_game.

Michael_and_Ray_were_playing_their_new_board_game. \n Some_mice that_were_in the_cartoon_they_watched_yesterday had_been gambling \n and_so Michael_and_Ray decided_to_wager a_bit_of_money on_the_board_game.

I'm_getting_a_little_tired_of_this_book. \n The_pages that_are_in the_magazine_ı_picked_up_yesterday look_to be_bright_and_glossy \n and_much_more_interesting.

I'm_getting_a_little_tired_of_this_book. \n Some_pages that_are_in the_magazine_I_picked_up_yesterday look_to be_bright_and_glossy \n and_much_more_interesting.

I'm_getting_a_little_tired_of_this_book. \n The_dogs that_are_in
the_magazine_I_picked_up_yesterday look_to be_the_type to_chew \n this_boring_book to_shreds.

I'm_getting_a_little_tired_of_this_book. \n Some_dogs that_are_in
the_magazine_I_picked_up_yesterday look_to be_the_type to_chew \n this_boring_book to_shreds.

Rosie_was_putting_the_groceries_away_in_the_cupboard. \n The_shelf that_had_caught her_attention_in_the_supermarket had_been showcasing_extra_large_jars \n of_Nutella,

Rosie_was_putting_the_groceries_away_in_the_cupboard. \n A_shelf that_had_caught her_attention_in_the_supermarket had_been showcasing_extra_large_jars \n of_Nutella, and_she_had_bought loads_and_loads_of_it.

Rosie_was_putting_the_groceries_away_in_the_cupboard. \n The_clerk that_had_caught her_attention_in_the_supermarket had_been recommending \n the_heirloom_tomatoes and_she'd_bought 10_of_them.

Rosie_was_putting_the_groceries_away_in_the_cupboard. \n A_clerk that_had_caught her_attention_in_the_supermarket had_been recommending $\backslash n$ the_heirloom_tomatoes and_she'd_bought 10_of_them.

Stephen_is_coming_over_with_the_children. \n The_babysitter that_was_in

Stephen_is_coming_over_with_the_children. \n A_babysitter that_was_in that_recent_sitcom reminds_me of_Stephen in_some_weird_way.

Stephen_is_coming_over_with_the_children. \n The_student that_was_in that_recent_sitcom reminds_me of_Stephen in_some_weird_way.

Stephen_is_coming_over_with_the_children. \n A_student that_was_in that_recent_sitcom reminds_me of_Stephen in_some_weird_way.

Yesterday,_Tony_finally_went_to_see_his_dentist. \n The_hygienist that_was_in the_book_he_was_reading apparently_had been_having a_torrid_affair \n with_a_famous_professor of_dentistry.

Yesterday,_Tony_finally_went_to_see_his_dentist. \n A_hygienist that_was_in the_book_he_was_reading apparently_had been_having_a torrid_affair \n with_a_famous_professor of_dentistry.

Yesterday,_Tony_finally_went_to_see_his_dentist. \n The_ballerina that_was_in the_book_he_was_reading apparently_had terrible_teeth \n and_so she_never_smiled
when_she_danced.
Yesterday,_Tony_finally_went_to_see_his_dentist. \n A_ballerina that_was_in
the_book_he_was_reading apparently_had terrible_teeth \n and_so she_never_smiled when_she_danced.

Tonight_we're_going_to_the_theatre. \n The_tickets that_were_for last_year's_carnival 27 were_still in_my_wallet.

Tonight_we're_going_to_the_theatre. \n Some_tickets that_were_for last_year's_carnival were_still in_my_wallet.

Tonight_we're_going_to_the_theatre. \n The_hats that_were_for last_year's_carnival were_still on_the_shelf \n nd_I_decided to_wear_one for_fun.

Tonight_we're_going_to_the_theatre. \n Some_hats that_were_for last_year's_carnival were_still on_the_shelf $\backslash n$ and_ı_decided_to_wear_one for_fun.

There_were_a_number_of_people_in_the_house. \n The_door that_was_on
28 the_old_barn_across_the_street was_making a_creaking_noise.
There_were_a_number_of_people_in_the_house. \n A_door that_was_on the_old_barn_across_the_street was_making a_creaking_noise.

There_were_a_number_of_people_in_the_house. \n The_weathervane that_was_on the_old_barn_across_the_street was_making a_creaking_noise.

There_were_a_number_of_people_in_the_house. \n A_weathervane that_was_on the_old_barn_across_the_street was_making a_creaking_noise.

Tania_took_the_kids_to_the_local_playground. \n The_slide that_was_at the_amusement_park_nearby had_been probably_10_times_as_high as_the_small_slide on_this_playground.

Tania_took_the_kids_to_the_local_playground. \n A_slide that_was_at the_amusement_park_nearby had_been probably_10_times_as_high \n as_the_small_slide on_this_playground.

Tania_took_the_kids_to_the_local_playground.\n The_woman that_was_at the_amusement_park_nearby had_been a_fan_of \n this_playground.

Tania_took_the_kids_to_the_local_playground. \n A_woman that_was_at the_amusement_park_nearby had_been a_fan_of \n this_playground.

Vincent_carefully_set_the_table. \n The_tablecloth that_was_in his_wife's_magazine 30 had_been much_more_colorful \n than_the_plain_white_one that_he_had.

Vincent_carefully_set_the_table. \n A_tablecloth that_was_in his_wife's_magazine had_been much_more_colorful \n than_the_plain_white_one that_he_had.

Vincent_carefully_set_the_table. \n The_restaurant that_was_in his_wife's_magazine had_been using_burlap on_their_tables \n for_a_rustic_look.

Vincent_carefully_set_the_table. \n A_restaurant that_was_in his_wife's_magazine had_been using_burlap on_their_tables \n for_a_rustic_look.

Looking_outside,_Wendy_saw_a_lovely_tree. \n The_leaves that_were_in
the_story_she'd_read had_been falling_off the_branches \n because_it_was_autumn,
31 but_the_scene_outside was_a_lovely_spring_day.
Looking_outside,_Wendy_saw_a_lovely_tree. \n Some_leaves that_were_in the_story_she'd_read had_been falling_off the_branches \n because_it_was_autumn, but_the_scene_outside was_a_lovely_spring_day.

Looking_outside,_Wendy_saw_a_lovely_tree. \n The_dresses that_were_in the_story_she'd_read had_been made_of_silk that_rustled_like the_leaves \n on_the_tree_outside.

Looking_outside,_Wendy_saw_a_lovely_tree. \n Some_dresses that_were_in the_story_she'd_read had_been made_of_silk that_rustled_like the_leaves \n on_the_tree_outside.

There's_an_interesting_piece_about_Africa_in_today's_paper. \n The_photograph that_is_on the_mantle has_a shot_of_my_grandfather when_he_arrived_from_Ghana \n and_I_always_like to_read_articles about_Africa.

There's_an_interesting_piece_about_Africa_in_today's_paper. \n A_photograph that_is_on the_mantle has_a shot_of_my_grandfather when_he_arrived_from_Ghana \n and_I_always_like to_read_articles about_Africa.

There's_an_interesting_piece_about_Africa_in_today's_paper. \n The_lamp that_is_on the_mantle has_a burnt_out_bulb and_I_could_barely_read the_article \n in_the_dim_light.

There's_an_interesting_piece_about_Africa_in_today's_paper. \n A_lamp that_is_on the_mantle has_a burnt_out_bulb and_I_could_barely_read the_article \n in_the_dim_light.

Abe_took_a_look_at_the_magazine. \n The_headline that_was_on a_nearby_brochure grabbed_his attention \n and_so he_read_the_brochure instead.

Abe_took_a_look_at_the_magazine. \n A_headline that_was_on a_nearby_brochure
grabbed_his attention \n and_so he_read_the_brochure instead.
Abe_took_a_look_at_the_magazine. \n The_car that_was_on a_nearby_brochure grabbed_his attention \n and_so he_read_the_brochure instead.

Abe_took_a_look_at_the_magazine. \n A_car that_was_on a_nearby_brochure grabbed_his attention \n and_so he_read_the_brochure instead.

Cecily_arrived_at_the_gala_dinner. \n The_caterer that_was_at the_wedding_she_attended_last_year had_told her that_all_the_food \n

Cecily_arrived_at_the_gala_dinner. \n A_caterer that_was_at the_wedding_she_attended_last_year had_told her that_all_the_food \n is_prepared_off_site and_just_re-heated_quickly before_it_is_served.

Cecily_arrived_at_the_gala_dinner. \n The_dentist that_was_at the_wedding_she_attended_last_year had_told her that_all_catered_food \n is_prepared_off_site and_just_re-heated_quickly before_it_is_served.

Cecily_arrived_at_the_gala_dinner. \n A_dentist that_was_at the_wedding_she_attended_last_year had_told her that_all_catered_food \n is_prepared_off_site and_just_re-heated_quickly before_it_is_served.

Yesterday,_Dan_went_to_the_museum. \n The_sculptures that_were_in the_dream_he_had_last_night had_seemed to_come_to_life, \n and_he_couldn't_help but_eye_the_museum_pieces warily.

Yesterday,_Dan_went_to_the_museum. \n Some_sculptures that_were_in the_dream_he_had_last_night had_seemed to_come_to_life, \n and_he_couldn't_help but_eye_the_museum_pieces warily.

Yesterday,_Dan_went_to_the_museum. \n The_elves that_were_in the_dream_he_had_last_night had_seemed so_familiar that_he'd_come \n to_the_museum_to_see if_his_dream had_been_based on_a_museum_painting.

Yesterday,_Dan_went_to_the_museum. \n Some_elves that_were_in the_dream_he_had_last_night had_seemed so_familiar that_he'd_come \n to_the_museum_to_see if_his_dream had_been_based on_a_museum_painting.

Evelyn_went_out_for_a_run_in_the_park. \n The_squirrels that_were_in a_documentary_she_watched_recently had_apparently lived_off_Cliff_bars \n is_prepared_off_site and_just_re-heated_quickly before_it_is_served. dropped_by_runners.

Evelyn_went_out_for_a_run_in_the_park. \n Some_squirrels that_were_in
a_documentary_she_watched_recently had_apparently lived_off_Cliff_bars \n dropped_by_runners.

Evelyn_went_out_for_a_run_in_the_park. \n The_monks that_were_in a_documentary_she_watched_recently had_apparently used_silent_meditation \n as_a_way_to_connect with_nature.

Evelyn_went_out_for_a_run_in_the_park. \n Some_monks that_were_in a_documentary_she_watched_recently had_apparently used_silent_meditation \n as_a_way_to_connect with_nature.

The_doctor_looked_carefully_at_the_x-ray. \n The_bone that_was_in the_textbook_the_doctor_was_studying had_not looked_anything_like \n
37 the_bone_in_the_x-ray.
The_doctor_looked_carefully_at_the_x-ray. \n A_bone that_was_in the_textbook_the_doctor_was_studying had_not looked_anything_like \n the_bone_in_the_x-ray.

The_doctor_looked_carefully_at_the_x-ray. \n The_description that_was_in the_textbook_the_doctor_was_studying had_not prepared_her_for_this.

The_doctor_looked_carefully_at_the_x-ray. \n A_description that_was_in the_textbook_the_doctor_was_studying had_not prepared_her_for_this.

Frank_was_putting_on_his_skiing_clothes. \n The_gloves that_were_in the_pamphlet_he'd_read_regarding_Canadian_winter_vacations appeared_to be\n much_thicker and_warmer-looking than_his_own.

Frank_was_putting_on_his_skiing_clothes. \n Some_gloves that_were_in the_pamphlet_he'd_read_regarding_Canadian_winter_vacations appeared_to be \n much_thicker and_warmer-looking than_his_own.

Frank_was_putting_on_his_skiing_clothes. \n The_trucks that_were_in the_pamphlet_he'd_read_regarding_Canadian_winter_vacations appeared_to be \n using_heavy_chains on_their_tires.

Frank_was_putting_on_his_skiing_clothes. \n Some_trucks that_were_in
the_pamphlet_he'd_read_regarding_Canadian_winter_vacations appeared_to be \n using_heavy_chains on_their_tires.

Gwen_looked_up_at_the_sky. \n The_clouds that_were_in the_poem_she'd_read had_been tinged pink_and_orange \n but_the_ones she_could_see_in_the_sky

Gwen_looked_up_at_the_sky. \n Some_clouds that_were_in the_poem_she'd_read had_been tinged pink_and_orange \n but_the_ones she_could_see_in_the_sky were_just_a_dull_gray.

Gwen_looked_up_at_the_sky. \n The_lovers that_were_in the_poem_she'd_read had_been sending_secret_messages \n to_each_other by_carrier_pigeon.

Gwen_looked_up_at_the_sky. \n Some_lovers that_were_in the_poem_she'd_read had_been sending_secret_messages \n to_each_other by_carrier_pigeon.

Harry_really_likes_his_preschool. \n The_girls that_were_at
the_beach_where_he_went_last_summer had_been teasing_him \n about_his_curly_hair, 40 but_the_kids_in_the_new_preschool were_much_more_friendly.

Harry_really_likes_his_preschool. \n Some_girls that_were_at
the_beach_where_he_went_last_summer had_been teasing_him \n about_his_curly_hair, but_the_kids_in_the_new_preschool were_much_more_friendly.

Harry_really_likes_his_preschool. \n The_jellyfish that_were_at the_beach_where_he_went_last_summer had_been drifting_in_the_sea $\backslash n$ and_he_drew a_picture_of_them for_his_preschool_teacher.

Harry_really_likes_his_preschool. \n Some_jellyfish that_were_at
the_beach_where_he_went_last_summer had_been drifting_in_the_sea \n and_he_drew a_picture_of_them for_his_preschool_teacher.


[^0]:    ${ }^{1}$ The term bridging originates with Clark 1975. For Clark, bridging involves the identification in memory of a required antecedent for an expression marked as Given; in his usage, even ordinary pronominal anaphora is a case of bridging. More recently, bridging has sometimes been taken to be an instance of anaphora, involving a linguistic (as opposed to cognitive) antecedent (e.g., Krahmer \& van Deemter 1998); in yet another proposal, Roberts 2003 understands bridging as a semantic phenomenon, involving reinterpretation of the bridged noun as relational, with the second argument being selected from context. We do not seek here to determine the correct model of the phenomenon; our broad understanding of bridging does, though, have certain consequences for our experimental design, as we discuss in relation to Experiment 2.

[^1]:    ${ }^{2}$ For recent attempts to model how world knowledge supports bridging, see Bos et al. 1995 and Irmer 2009. Additionally, much work in SDRT aims to model commonsense reasoning involving world knowledge as it contributes to linguistic interpretation. See, e.g., Lascarides \& Asher 1993, Asher \& Lascarides 1998.
    ${ }^{3}$ Again, see Clark 1975 for early discussion of this point.

[^2]:    ${ }^{4}$ Because hearers assume that the discourse they are hearing is coherent, they will always find some way to relate the content of sequential utterances, so even "brand new" entities will have to be linked up in some way to whatever was talked about before. However, in the abnsence of bridging, no specific relation between entities is posited.

