"Liz can buy a croissant or donut. That's both together, right?" Distinguishing target Free Choice from non-target Modal Conjunction in Child French

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Abstract. Several acquisition studies have reported that children draw free choice inferences at adult-like rates from modal disjunctive statements. This study explores an alternative explanation for children's seemingly adult-like behavior: modal conjunction, which shares verifying and falsifying conditions with free choice. However, existing experimental setups were not able to distinguish the two. With our novel design, we were able to set apart modal conjunctive interpreters from genuine free choice interpreters, using a new type of condition: a mutually exclusive context. The results revealed that free choice inferences are not so early acquired as previously thought. In contrast to the earlier studies, only half of the children between 4 and 6 were genuine adult-like free choice interpreters. The other children either show the basic inclusive interpretation of disjunction, or, as hypothesized, a modal conjunctive interpretation.

Keywords. Acquisition; Disjunction; Free Choice; Modal conjunction; Mutually exclusive context

1. Introduction. Plain disjunctive statements as in (1) typically yield an exclusivity inference (1a) generated by strengthening of the basic logical inclusive meaning of disjunction in (1b). Thus, (1) is commonly taken to mean that exactly one of the two disjuncts is true, that is Liz either bought the croissant or the donut. It has been reported in several acquisition studies that children perform non-adult-like with such statements in that they do not generate the exclusivity inference (1a) and allow the logical inclusive meaning of disjunction (1b) (Chierchia et al. 2001, 2004; a.o.), or/and derive an incorrect conjunctive inference (1c) (Braine & Rumain 1981, Cochard et al. 2023, Paris 1973, Singh et al. 2016, Tieu et al. 2017).

(1) Liz bought a croissant or a donut. '*C or D*'

a. **Exclusivity inference:**
Liz bought a croissant or a donut, *but not both*. $(C \vee D) \wedge \neg(C \wedge D)$

b. **Logical inclusive meaning:**
Liz bought a croissant or a donut, *possibly both*. $(C \vee D)$

c. **Conjunctive inference:**
Liz bought a croissant *and* a donut. $(C \wedge D)$

When disjunction is embedded under a possibility modal, henceforth modal disjunctive statements, as in (2), it is inferred that both disjuncts must each be individually permitted. This type of inference has been referred to as a free choice inference (Kamp 1973). So, (2) is taken to mean that there are two pastries that Liz can buy, namely a croissant and a donut (2a). On top of the free choice inference, an additional, although optional (Simons 2005), exclusivity inference can be

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derived according to which it is not possible for Liz to buy the croissant *and* the donut, (2b).

(2) Liz can buy a croissant or a donut. '*can C or D*'

a. **Free choice inferences:**
i. ⇝ Liz can buy a croissant. $\Diamond C$
ii. ⇝ Liz can buy a donut. $\Diamond D$
$\} \; \Diamond C \wedge \Diamond D$

b. **Exclusivity inference:**
⇝ Liz can buy a croissant or a donut, *but not both together*. $\Diamond(C \vee D) \wedge \neg\Diamond(C \wedge D)$

In contrast to children's non-adult-like interpretation of plain disjunctive statements, recent studies focusing on modal disjunctive statements suggest that children correctly derive the free choice inference at adult-like rates (Huang & Crain 2020, Tieu et al. 2016, Zhou et al. 2013).

2. Disentangling Free Choice from Modal Conjunction. Experiments that investigated the acquisition of free choice inferences did so by falsifying one of the two disjuncts. In this section, we show that this is not enough to confidently assert that children know how to derive such inferences. To be more precise, we investigated the idea that children's allegedly adult-like responses might also arise in a non-adult-like grammar where they posit modal conjunction, as paraphrased in (3).

(3) Liz can buy a croissant *and* a donut. $\Diamond(C \wedge D)$

As a starting point, take (4) adapting the experiment setup from Huang & Crain (2020). In the control condition (4a), the character is permitted to do both actions: the target response is to accept the test sentence (4) since the free choice inference is satisfied. To the contrary, in the critical condition (4b), the character is only permitted to perform one of the two actions: the target response is to reject the test sentence, since the free choice inferences are no longer both satisfied.

(4) Liz can buy a croissant or a donut.

a. **Control condition:**
Liz has the possibility to buy a croissant. $\Diamond C$
She also has the possibility to buy a donut. $\Diamond D$
$\} \; \Diamond C \wedge \Diamond D$

b. **Critical condition:**
Liz has the possibility to buy a croissant. $\Diamond C$
But she does not have the possibility to buy a donut. $\neg\Diamond D$
$\} \; \Diamond C \wedge \neg\Diamond D$

However, the conclusion that accepting the test sentence in (4a) and rejecting it in (4b) necessarily reflects a free choice inference is too fast. Indeed, this answer pattern may also arise for another reason than correctly deriving a free choice inference: if the test sentence is incorrectly interpreted as a modal conjunctive statement, on a par with (3), then the same response pattern is expected, as illustrated in (5) for the control condition and (6) for the critical condition.

(5) Expected responses for the *control* condition (4a):
TRUE if understood as $\Diamond C \wedge \Diamond D$ — Free Choice
TRUE if understood as $\Diamond(C \wedge D)$ — Modal Conjunction

(6) Expected responses for the *critical* condition (4b):
FALSE if understood as $\Diamond C \wedge \Diamond D$ — Free Choice
FALSE if understood as $\Diamond(C \wedge D)$ — Modal Conjunction

Nevertheless, a modal conjunctive interpretation is not equivalent to a free choice interpretation. This is because modal conjunction entails free choice, but not conversely. Under the experimental setup presented in (4), they do indeed both have the same satisfying and falsifying conditions, but this is not always the case. A different experiment setup – namely, mutually exclusive scenarios such as (7) – allows us to tease apart their different truth conditions.

(7) **Mutually Exclusive scenario:**

a. i. Liz has the possibility to buy a croissant. $\Diamond C$
ii. She also has the possibility to buy a donut. $\Diamond D$
$\}$ $\Diamond C \wedge \Diamond D$

b. Liz does not have the possibility to buy both pastries. $\neg\Diamond(C \wedge D)$

In this situation, the character has the possibility of buying either the croissant *or* the donut: he is free to buy whichever he chooses, as stated by (7a). But, critically, the character does not have the possibility to buy the croissant *and* the donut, as stated in (7b). In this scenario, free choice is satisfied (8a), but modal conjunction is not (8b).

(8) Liz can buy a croissant or a donut. *Mutually exclusive scenario*

a. TRUE if understood as $\Diamond C \wedge \Diamond D$ Free Choice
b. FALSE if understood as $\Diamond(C \wedge D)$ Modal Conjunction

Given that some children tend to assign a conjunctive interpretation for simple disjunctive statements, it is plausible that they may also assign a modal conjunctive interpretation to modal disjunctive statements. Importantly, previous studies investigating the acquisition of free choice inferences did not include any sort of mutually exclusive condition. Thus, it is premature to conclude that 4 to 6-year-olds actually derive genuine free choice inferences at adult-like rates. Instead, some of the allegedly adult-like children might have given an adult-like response that arises for a non-adult-like reason. Addressing this issue, we developed a new experimental design distinguishing free choice inferences from modal conjunctive ones.

3. A novel setup to investigate free choice inferences. This section presents a novel design taking inspiration from Liu (2017) to investigate the derivation of free choice inferences. This design introduces two new conditions not used before in acquisition studies to our knowledge: a *Mutually Exclusive* condition adapted that allows to detect modal conjunctive interpreters and a *Package* condition that investigates whether the exclusivity inference is computed.

3.1. PARTICIPANTS. 68 native French children participated in the experiment. To be included in the study, participants had to be native French speakers and not have known cognitive, visual or hearing impairments. In addition, 40 native French adults were recruited on Prolific[1].

3.2. PROCEDURE. A truth-value judgment task (Crain & Thornton 1998) was used for this study. Participants had to judge a sentence describing the picture of a shop-selling situation as in Figure 1. Each participant was told that the shop employee (the character at the bottom of Figure 1) tries to help customers (e.g. the character at the top) by telling them what they can buy with the number of coins in their purse. Participants had to decide whether or not the shop employee gave

[1]The present experiment received approval from the CEDIS ethics committee of Nantes Université (IORG0011023) and was assigned the identification number 06112023-1.

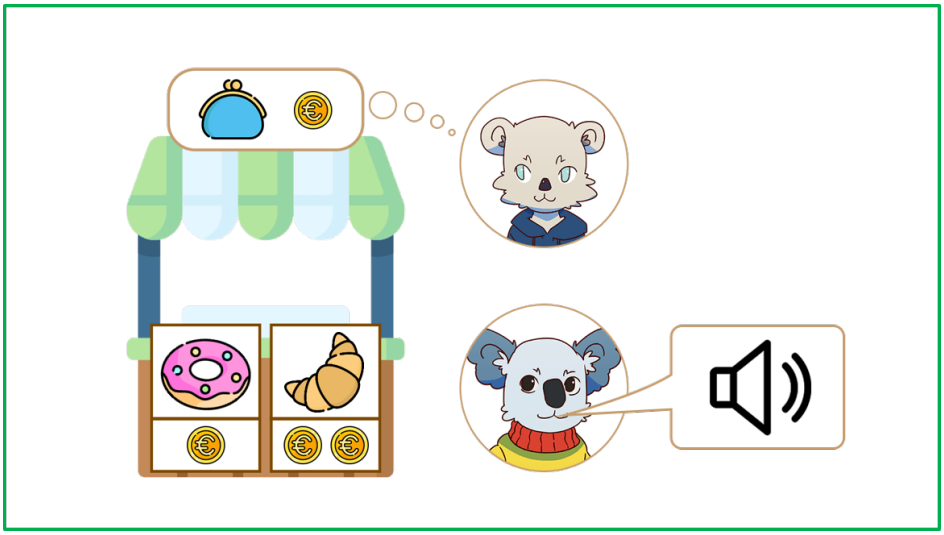


Figure 1: Sample item for *Liz can buy a croissant or a donut.*

a successful description of the picture by pressing a thumbs-up button (correct) or a thumbs-down button (incorrect). The children were tested individually in a quiet space at their school using a tablet. The adults participated in a web-based version of the experiment.

3.3. Stimuli. Each picture contains several key elements. The bottom character, the koala, is a shop employee and appears from one item to the next; he utters the test sentence. Participants were told that the shop employee is a newcomer and, as such, he can make mistakes since it is his first day at work. The top character is a customer, who varies across pictures. Each customer comes to the shop with a certain number of coins in their purse. For instance, Figure 1 depicts a condition where the bear arrives in the shop with one coin in her purse. Finally, the shop stand shows two spaces, each of them containing a food item and under it the price. Here, the croissant costs one coin and the donut costs two coins. After hearing the test sentence, the thumb-up and down buttons appear on the right side of the screen. The position of those buttons was counterbalanced between participants.

3.4. Design. The experiment included the three critical conditions in Figure 2 and the two control conditions in Figure 3. The conditions varied the price of the food and the number of coins in the purse. It was a within-subject design and participants saw six items of each condition (18 critical items and 12 control items, 30 items in total). This was needed to determine the consistency in individual answer patterns comparing a given participant's interpretation across the three critical conditions.

(a) Free Choice False (b) Mutually Exclusive (c) Package

Figure 2: Critical conditions

(a) Control True (b) Control False

Figure 3: Control conditions

For each condition, participants heard a modal disjunctive statement preceded by a lead-in fragment introducing the number of coins in the purse as in (9).

(9) Avec une pièce, Liz l'ours **peut** acheter un croissant **ou** un donut.
with une coin Liz the.bear can.3SG.PRS buy.INF a croissant or a donut
'With une coin, Liz the bear can buy a croissant or a donut.'

The *Free Choice False* condition was designed in the same spirit as previous studies: one of the disjuncts is accessible while the other is not. In figure 2a, with one coin, it is true that the customer can buy a donut, but it is false that she can buy a croissant, as the latter costs two coins. Thus, the free choice inferences do not hold here. Moreover, the modal conjunctive interpretation does not hold either, for the same reason, and also because the customer cannot buy the croissant and the donut together. So, rejection of this condition reflects either a free choice interpretation or a modal conjunctive interpretation. Furthermore, a yes-answer in this condition is a clear signal of a non-adult-like interpretation. But at this stage it is not yet possible to distinguish an inclusive interpretation, where at least one disjunct is permitted, from an exclusive interpretation, where exactly one disjunct is permitted.

The *Mutually Exclusive* condition is the critical condition which, alongside the *Free choice false* condition, was needed to disentangle a free choice interpretation from a modal conjunctive one. In this condition, the possibility of buying both food items is excluded, falsifying modal conjunction. Crucially, it allows a free choice interpretation, as it is possible to buy one or the other pastry, whichever she chooses. In Figure 2b, with one coin, it is true that the customer can buy a croissant and it is also true that she can buy a donut. But, it is false that she can buy both the donut and the croissant as she does not have enough coins. Only on the basis of an answer pattern where the participant gives a consistent yes-answer to the *Mutually Exclusive* condition alongside a consistent no-answer to the *Free Choice false* condition, can it be confidently concluded that the free choice inference is derived.

The display of the pastries and price in the food stand in the *Package* condition differs from the other two conditions. Here, both food items must be bought together in a package. In Figure 2c, the package containing both the donut and the croissant costs one coin. It is not possible to get the croissant without getting the donut, and conversely. This condition serves two purposes: on the one hand, it checks whether the optional exclusivity inference shown in (2b) is derived. If so, then rejection is expected. Combined with the two other conditions, the *Package* condition is needed to distinguish two potential adult-like grammars that both yield genuine free choice inferences but differ in the derivation of the exclusivity inference. On the other hand, although not critical in distinguishing a genuine free choice interpretation from a modal conjunctive one, it allows the latter and gives a chance to a modal conjunctive interpreter to give a positive answer in one of the critical

conditions.

Table 1 below summarises the expected responses patterns for each of five possible grammars.

		 Free Choice false	 Mutually exclusive	 Package
Target	+ Free Choice + Exclusivity $(\Diamond P \wedge \Diamond Q) \wedge \neg\Diamond(P \wedge Q)$	NO	YES	NO
	+ Free Choice − Exclusivity $(\Diamond P \wedge \Diamond Q) \wedge \Diamond(P \wedge Q)$	NO	YES	YES
Non-Target	Modal Conjunction $\Diamond(P \wedge Q)$	NO	NO	YES
	− Free Choice − Exclusivity $\Diamond(P \vee Q)$	YES	YES	YES
	− Free Choice + Exclusivity $\Diamond(P \vee Q) \wedge \neg\Diamond(P \wedge Q)$	YES	YES	NO

Table 1: Response patterns and their corresponding possible grammar

If the conclusion from previous studies that children can derive a genuine free choice inference is correct, then it is expected that most children will follow one of the two possible target patterns depending on whether they draw the exclusivity inference: the [+ Free Choice + Exclusive] or the [+ Free Choice − Exclusive] response pattern. However, if our hypothesis is on the right track and children interpret modal disjunctive statements as modal conjunction instead, then a subset of children are expected to fit the modal conjunctive response pattern.

Besides the three critical conditions, twelve filler items served the purpose of balancing the number of yes and no-responses. Two types of fillers were created for different purposes. Six asked about elements of the display to make sure that participants were paying attention to the picture and to the recorded sentence, e.g. by stating the price of a given disjunct as in (10). The other six checked if participants understood the coin system, for example by stating what could be purchased with a certain amount of coins as in (11).

(10) Un croissant coûte une pièce.
a croissant cost.3SG.PRS one coin
'A croissant costs one coin.'

(11) Avec une pièce, Liz l'ours peut acheter un croissant.
with one coin Liz the.bear can.3SG.PRS buy.INF a croissant
'With one coin, Liz the bear can buy a croissant.'

4. Results. Exclusion of participants from analysis was determined based on their performance on the controls and fillers. Participants were not allowed to make more than one error out of six true controls, no more than one error out of six false controls and no more than three errors out of

twelve obvious yes/no filler items. After exclusion, 57 children (range = 3;11–6;9, M = 5;5) and 37 adults (range = 22-67, M = 34) remained for analysis. Group results and mixed model analyses are reported in section 4.1 while individual analyses are reported in section 4.2.

4.1. Group analyses. Figure 4 shows that children performed differently from adults in the three critical conditions. To determine whether children's responses significantly differed from adults, a generalized linear mixed-effects model was fitted in R (R Core Team 2022) using the `glmer` function from the *lme4* package (Bates et al. 2015). The model included the interaction[2]of group (adults vs. children) and condition (*Free Choice False*, *Mutually Exclusive* and *Package*) as fixed effects. The controls conditions were not introduced in the model since individual variation is expected across conditions. Participants were included as random effects with a random slope on conditions. Taking adults as the reference point, this model revealed a significant main effect of the group ($p < 0.0001$), suggesting that children's responses differed from the adults at the group level (Table 2).

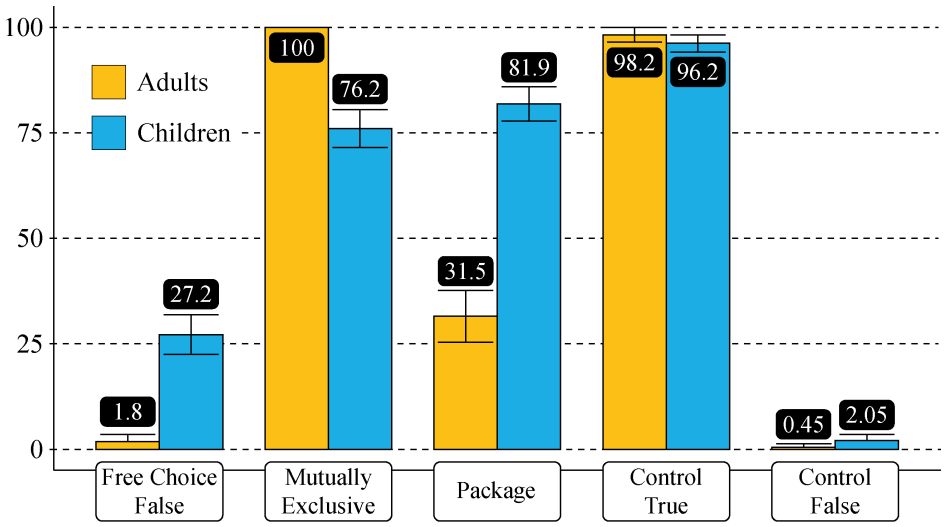


Figure 4: Bars show the mean percentage of acceptance for each condition and each group. Whiskers represent a confidence interval of 95%

To further investigate all contrasts, Tukey-corrected pairwise comparisons were computed (Table 3). The comparisons confirmed that children's responses to the *Free Choice false* condition differed from those of adults ($p < 0.0001$). As for the *Mutually Exclusive* condition, although no difference was found ($p = 0.76$), the ceiling acceptance in the adult results is problematic as it prevents us from confidently reaching the conclusion that children performed at adult-like rates for this condition.[3]Furthermore, the comparisons also confirmed that children and adults differed significantly in their acceptance rate of the *Package* condition, with children being more likely to accept this condition than adults ($p < 0.0001$).

[2]An ANOVA for linear models showed that an interaction model was more successful in explaining the variance than an additive model ($\chi^2(4) = 56.5$, $p < 0.0001$). Items were not included as random effects since each item features a unique combination of character and food. A model including items as random effects returns little to no variance at all for this factor; which means that no particular items stand out and bias the results.

[3]Indeed, as broadly discussed in Bates et al. (2015), and more specifically for linguistic data in Clark et al. (2023),

```
## Formula: answer ~ condition * group + (1 + condition | part_number)
## Fixed effects:
##                               Estimate Std. Error z value      Pr(>|z|)
## FC_False:adults (Intercept)     -7.317      1.227  -5.963 0.00000000247 ***
## Mutually_Exclusive              28.027     61.202   0.458       0.64700
## Package                          4.727      1.571   3.010       0.00262 **
## Children                         5.063      1.232   4.109 0.00003977355 ***
## Mutually_Exclusive:Children    -23.217     61.204  -0.379       0.70443
## Package:Children                 2.236      2.134   1.048       0.29472
```

Table 2: Mixed model output with adults and children

```
## Formula: pairwise ~ group * condition, adjust = "tukey"
## $`simple contrasts for group`
## adults - children
##                                estimate     SE  df z.ratio p.value
## condition = FC_False:             -5.06  1.23 Inf  -4.109  <.0001 ***
## condition = Mutually_Exclusive:  18.15 61.21 Inf   0.297  0.7668
## condition = Package:              -7.30  1.82 Inf  -4.001  0.0001 ***
```

Table 3: Pairwise comparisons output

Finally, in order to check whether age was a driving factor in explaining children's responses, a generalized linear mixed-effects model was computed including only the children. This model included the critical conditions and the age in months as fixed effects. Similarly to the previous model, participants were included as random effects with a random slope on conditions. This model revealed that age played no role ($p = 0.495$), Table 4.

4.2. Individual results. To answer our research questions, it is necessary to run an analysis of the individual results to determine which interpretive patterns were at stake. To do so, we defined the following criterion: if a participant consistently accepted a condition at least 5 times out of 6, she is considered as an *accepter*. If the condition was accepted 0 or 1 time, she was considered as a *rejecter*. Any other number was considered to be *chance* behavior. Table 5 shows the distribution of participants after applying this criterion.

For the adults, the individual analysis matched the overall results: all except one rejected the *Free Choice False* condition and all accepted the *Mutually Exclusive* condition. However, while they agreed on the first two conditions, the group split into two uneven groups for the *Package* condition, the majority of them rejecting it and about a quarter accepting it. In contrast, for the children, the individual analysis showed a more diverse distribution. Indeed, although the majority in the *Free Choice False* and the *Mutually Exclusive* conditions resembled the adult cohort, there were some children who consistently accepted the former and/or rejected the latter. In the *Package* condition, the children also split into two groups but in a different manner than adults: while most

model convergence and overfitting issues can be aggravated by specific data scenarios such as ceiling data as it becomes nearly impossible for the model to estimate the effects of predictors accurately. To mitigate the issue of ceiling data, an option would be to compute a separate penalized regression using Bayesian priors for instance. We propose such models in Cochard et al. (2024).

```
## Formula: answer ~ condition + Age_in_months + (1 + condition | part_number)
## Fixed effects:
##                          Estimate Std. Error z value      Pr(>|z|)
## FC_False (Intercept)      -1.4576     0.2857  -5.101   0.000000337 ***
## Mutually_Exclusive         3.2327     0.2570  12.580   <.000000001 ***
## Package                    3.7126     0.2727  13.616   <.000000001 ***
## Age_in_months             -0.1711     0.2509  -0.682         0.495
```

Table 4: Mixed model output within children

		 Free Choice false	 Mutually Exclusive	 Package
Adults	Accepter	0	37	9
	Rejecter	36	0	25
	At chance	1	0	3
Children	Accepter	11	41	42
	Rejecter	38	11	5
	At chance	8	5	10

Table 5: Distribution of individual patterns across conditions

adults consistently rejected this condition, the majority of the children accepted it and only a few of them consistently rejected it.

The next step was to determine combined patterns by checking the conditions together, focusing on the *Free Choice False* and the *Mutually Exclusive* conditions. Tables 6 and 7 show the distribution of response patterns for adults and children,[4]respectively. Unsurprisingly, all adults fell into the free choice interpretation category (bottom left cell of Table 6). To the contrary, children were divided across three distinct but consistent patterns: 22 children fell into the same category as adults. 11 children accepted both the *Free Choice False* and the *Mutually Exclusive* conditions, corresponding to a [– Free Choice – Exclusive] interpretation, and 11 other children rejected both conditions, revealing a modal conjunctive interpretation.

5. General discussion. The goal of this study was to investigate how children interpret modal disjunctive statements in French, putting to test the earlier claims that children derive the associated free choice inference at adult-like rates. Specifically, we tested the hypothesis that alleged adult-like children might instead be modal conjunctive interpreters, and, furthermore, investigated whether children draw the additional exclusivity inference. To carry out these goals, we developed an innovative design that included two new conditions: the first condition is the *Mutually Exclusive* condition which allows us to tease apart an (adult-like) free choice interpretation from a (non-adult-

[4]To preserve space, at-chance participants in at least one of the two conditions do not appear on Tables 6 and 7.

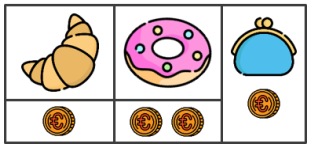
‘Liz can buy a croissant or a donut.’ $\Diamond(C \vee D)$		 Mutually Exclusive	
		Accept	Reject
 Free Choice False	Accept	0 *Inclusive* $\Diamond(C \vee D)$	0 *Logically impossible*
	Reject	36 *Free Choice* $\Diamond C \wedge \Diamond D$	0 *Modal Conjunction* $\Diamond(C \wedge D)$

Table 6: Distribution of the number of adult individual response patterns for the *Free choice False* and the *Mutually Exclusive* conditions (N = 36/37)[5].

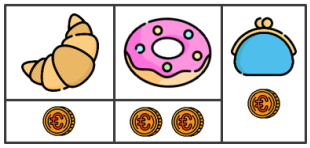
‘Liz can buy a croissant or a donut.’ $\Diamond(C \vee D)$		 Mutually Exclusive	
		Accept	Reject
 Free Choice False	Accept	11 *Inclusive* $\Diamond(C \vee D)$	0 *Logically impossible*
	Reject	22 *Free Choice* $\Diamond C \wedge \Diamond D$	11 *Modal Conjunction* $\Diamond(C \wedge D)$

Table 7: Distribution of the number of child individual response patterns for the *Free choice False* and the *Mutually Exclusive* conditions (N = 44/57).

like) modal conjunction interpretation, which previous experimental designs failed to differentiate. The results for this condition validate our hypothesis by showing that some children, who appear adult-like in rejecting the *Free Choice False* condition, are in fact modal conjunctive interpreters. Using mutually exclusive scenarios thus proved essential in teasing apart two subgroups who agreed on the *Free Choice False* condition but differed on the *Mutually Exclusive* condition, successfully identifying a subset of children who gave a modal conjunctive interpretation of modal disjunctive statements. The second condition, the *Package* condition, allows us to further test for the exclusivity inference, be it on the target (free choice), or the non-target (modal conjunctive) interpretations of modal disjunction.

Going back to Table 1, four out of the five the expected response patterns were attested, summarized in Table 8 below.[6]

			Children	Adults
Target	[+ Free Choice]	[+ Exclusivity]	4/44 (9%)	25/36 (69%)
		[– Exclusivity]	16/44 (36%)	9/36 (25%)
Non-Target	Modal Conjunction		11/44 (25%)	0/36 (0%)
	[– Free Choice – Exclusivity]		11/44 (25%)	0/36 (0%)

Table 8: Summary of the four attested patterns

Starting with the adult-like patterns, our results show that half of consistent 4 to 6-year-olds (22/44; 50%) computed a free choice inference in an adult-like way, successfully rejecting the *Free Choice False* condition and accepting the *Mutually Exclusive* condition. However, while this subset corresponds to the largest group of children in our study, it does not reach the adult-like rates observed in previous studies where the majority of children appeared to derive a free choice inference (e.g. 98% of rejection of a condition that falsifies free choice inferences in Huang & Crain 2020). Furthermore, adding the *Package* condition to the discussion highlights a stark contrast between adults and children: while most of the adults rejected the *Package* condition and derived an exclusivity inference (25/34; 73%), only 4 [+ Free Choice] children (4/44; 9%) did so. To the contrary, 16 children (16/44; 36%) accepted the *Package* condition, not deriving the exclusivity inference.

Turning now to the non-adult-like patterns, our study found that children can face difficulties with modal disjunctive statements: first, 11 children (11/44; 25%) allowed a [–Free Choice – Exclusivity] interpretation, accepting both the *Free Choice False* and the *Mutually Exclusive* conditions. These children show the basic inclusive interpretation of disjunction, drawing neither a free choice, nor an exclusivity inference in modal contexts. Second, the last 11 children (11/44; 25%) allowed a modal conjunctive interpretation, rejecting both the *Free Choice False* and the *Mutually Exclusive* conditions. These results were confirmed in child Romanian by Bleotu et al. (2024) with an experimental setup replicating our conditions.

Conjunctive interpretations of disjunction have long been reported in the child language literature, going back to Paris (1973), for matrix disjunction in plain, affirmative contexts (see §1),[7] but also for disjunction embedded under *every* (Singh et al. 2016). The novel finding reported here is that these non-target interpretations extend to modal free choice contexts.[8]

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[6] 2 out of the 22 [+ Free Choice] children and 2 out of the 36 [+Free Choice] adults were at chance on the *Package* condition. For a complete report of the *Package* condition, see Cochard et al. (2024).

[7] For recent eye tracking evidence with toddlers, see Lobina et al. (2023).

[8] This finding is indeed expected, once we assume Cochard et al. (2024) uniform analysis of children's conjunctive interpretations of disjunction, across plain/affirmative, universally quantified and modal contexts, straightforwardly extending Singh et al. (2016).

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