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THE ROLE OF INTONATION AND CONTEXT IN LACK OF NECESSITY MEANINGS IN DEONTIC MODALS IN CHILD ROMANIAN

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Negated deontic necessity modals: Two readings

Consider the following:

Trebuie să nu te duci la supermarket singur.
must SĂ.SBJV not CL. go.2SG to supermarket alone
'You must not go to the supermarket on your own.'

❖ *trebuie să nu* expresses **an interdiction reading**:

It is necessary that you do not go to the supermarket on your own.

NECESSARY > NOT

N. B. SĂ = Mood marker (subjunctive)



Negated deontic necessity modals: Two readings

Nu e nevoie să pictezi mâine.
not be.IND.PRS. need SĂ.SBJV paint.2SG tomorrow
'You need not paint tomorrow.'

❖ *nu e nevoie să* expresses **a lack of necessity reading**:

It is not necessary that you paint tomorrow.

NOT > NECESSARY



Negated deontic necessity modals: Two readings

Nu trebuie să plângi.
Not must SĂ.SBJV cry.2SG
'You must not cry.'

❖ *nu trebuie să* is ambiguous between:

(i) an interdiction meaning:

It is necessary that you do not cry. NECESSARY > NOT

(ii) a lack of necessity meaning:

It is not necessary that you cry. NOT > NECESSARY



Disambiguation: Context and intonation

Nu trebuie să plângi.
Not must SĂ.SBJV cry.2SG
'You must not cry.'

Clues used by adults for disambiguation:

- ❖ Context
- ❖ Intonation

→ What about children?

N. B. The ambiguity in interpretation characterizes several Romance languages (French: *il ne faut pas*, Italian: *non devi...*, a.o.)



Alternatives in Romanian

- ❖ Romanian-an interesting testing ground for the interpretation of deontic negated modals 😊

Unambiguous interdiction	Unambiguous lack of necessity	Ambiguous between interdiction and lack of necessity (interpretation varies with intonation & context)
<i>trebuie să nu</i> 'must SĂ not'	<i>nu e nevoie să</i> 'not is need SĂ'	<i>nu trebuie să</i> 'not must SĂ'

- ❖ In Romanian, negation may come before or after the modal, acting as a cue for interpretation (*trebuie să nu*, *nu e nevoie să*).
- ❖ *Nu trebuie să* may have two interpretations (interdiction, lack of necessity) despite negation preceding the modal.
- ❖ In English, negation always appears after the modal (*You need not...*, *You must not...*), *not* may instantiate either sentence or complement negation.

Variation between languages

English

- ❖ You **must not** go to the supermarket on your own.
- ❖ Only interdiction

German

- ❖ Du **musst nicht** alleine zum Supermarkt gehen
- ❖ Only lack of necessity



Aims

- ❖ How do Romanian children understand lack of necessity modals initially?
Do they understand it as interdiction?
- ❖ To what extent does intonation act as a cue for interpretation?
- ❖ To what extent does situational context lead to a more adult-like interpretation?
- ❖ What helps children disambiguate sentences with negated deontic modals (prosody, situational context)?

Previewing the results:

- ❖ In the absence of situational context, children initially interpret all negated deontic necessity modals as interdiction, regardless of prosody
- ❖ In the presence of situational context, children are able to tease lack of necessity and interdiction apart and even show sensitivity to prosodic cues.

Theoretical problem and contribution

❖ How do children interpret negated deontic necessity modals?

❖ **Main questions:** Q1: Which reading comes first: the weak (lack of necessity) reading or the strong (interdiction) reading?

Q2: Is children's interpretation sensitive to prosody?

Q3: Does children's interpretation become more adult-like with situational context?

Q1: Which reading comes first: the weak (lack of necessity) reading or the strong (interdiction) reading?

❖ **Several proposals:**

(i) **The weak reading is primary, and the strong reading is derived from it :**

(a) via *negative strengthening* (in accounts which treat *must* as a PPI and *need* as an NPI, such as Israel 1996, Homer 2010, 2015, Iatridou & Zeijlstra 2013) or

(b) as a *scaleless implicature* (Jeretič 2021).

⇒ Children should therefore understand lack of necessity easily.

Theoretical problem and contribution

❖ **Q1: Which reading comes first: the weak (lack of necessity) reading or the strong (interdiction) reading?**

❖ Several proposals:

(ii) children might interpret negation and modals based on the *surface scope* of these items in the language (Musolino 1998).

➤ *nu e nevoie să* and *nu trebuie să* should be interpreted as lack of necessity (Negation comes before Necessity)

➤ *trebuie să nu* should be interpreted as interdiction (Necessity comes before Negation)

Theoretical problem and contribution

❖ **Q1: Which reading comes first: the weak (lack of necessity) reading or the strong (interdiction) reading?**

❖ Several proposals:

(iii) Children may start out with *strong scope*

Semantic Subset Principle-see Crain et al. 1994

In cases where a sentence can have two interpretations in UG, and these interpretations fall under an entailment relation (i.e., contexts that make one reading true are a subset of those that make the other reading true), learners will choose the 'strong' restrictive reading.

❖ Otherwise, it is hard to see how a learner can unlearn the weak reading, because situations that make the strong reading true also render the weak reading true, positive evidence about the strong reading is compatible with the learner's initial hypothesis, and negative evidence is not available/very rare.

Theoretical problem and contribution

❖ **Q1: Which reading comes first: the weak (lack of necessity) reading or the strong (interdiction) reading?**

❖ Several proposals:

(iv) Children may show *premature closure* (Acredolo & Horobin 1987, Ozturk & Papafragou 2015, Leah & Carey 2020, a.o.), i.e., a cognitive tendency to commit to only one alternative out of several.

=> If children make use of premature closure, they may experience challenges with lack of necessity modals, which involve multiple alternatives.

Background on modality and negation in child language

❖ Gualmini & Schwarz (2009) have argued that the interaction with negation is a fundamental cue for the acquisition of the meaning of modal verbs.

i.e., while *must* and *need* are almost synonymous in the affirmative, their meanings are quite different in the negative.

❖ Downward entailing (DE) contexts enable learners to infer that certain actions are not forbidden but allowed.

a. He mustn't eat the spinach. (NECESSARY > NOT)

b. He needn't eat the spinach. (NOT > NECESSARY)

BUT DE contexts are unlikely to represent a reliable cue in acquisition.

N. B. It is hard for children to figure out the scope of negation with respect to deontic necessity in the absence of a clear situational context.

Background on modality and negation in child language

Production data

- ❖ In production, children seem to prefer using strong negated modals, i.e., modals which, when negated, give rise to strong semantic readings (as opposed to weak ones: *must not* instead of *do not have to*)

Support: (a) a corpus study on the spontaneous speech of French and Spanish children, conducted by Jeretič (2018)

(b) a corpus study on UK children, conducted by Dieuleveut et al. (2022)

- ❖ Children use weak negated modals to a lesser extent than predicted by the input.

Background on modality and negation in child language

Comprehension data. Experimental insights.

Gualmini & Moscati (2008)

❖ story-based investigation of English children's understanding of negated deontic necessity modals:

To be a good farmer, you need not feed the zebra.

- a. To be a good farmer, it is necessary not to feed the zebra. (NECESSARY>NOT) (CHILDREN)
- b. To be a good farmer, it is not necessary to feed the zebra. (NOT>NECESSARY) (ADULTS)

Background on modality and negation in child language

Gualmini & Moscati (2009)

❖ a story-based study on Italian 4-year-olds of epistemic possibility:

Il contadino può non dare le carote all'elefante.

The farmer can not give the carrots to the elephant

a. *it is not possible that the farmer gives carrots to the elephant (NOT > POSSIBILE) CHILDREN

b. it is possible that the farmer doesn't give carrots to the elephant (POSSIBILE > NOT) ADULTS

Background on modality and negation in child language

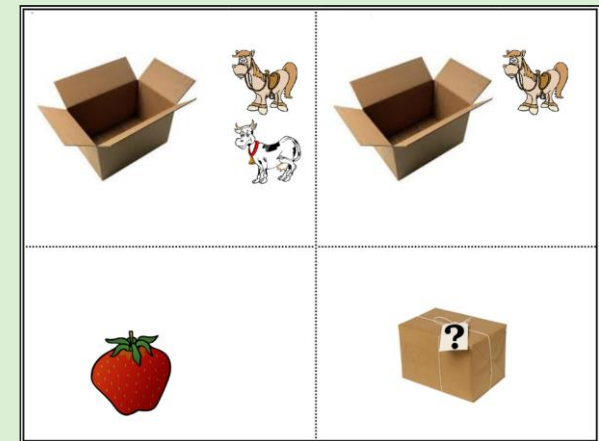
Moscati & Crain (2014)

- ❖ investigate 5-year-old Italian children's interpretation of epistemic modality and negation through the Hidden Box Paradigm employed by Noveck (2001)
- ❖ Participants were told that Box3 has either the contents of Box 1 or Box 2.
- ❖ They had to judge sentences like:

Ci può non essere una mucca nella scatola.

there might not be a cow in the box

- a. 'There might not be a cow in the box' (POSSIBLE > NOT) ADULTS
- b. *'There cannot be a cow in the box' *(NOT > POSSIBLE) CHILDREN



- ❖ The data can be explained by the Semantic Subset Principle: children first assume the strongest interpretation possible.
- ❖ Koring, Meroni & Moscati (2018): similar results from Dutch

Background on modality and negation in child language

N.B. How is our study novel?

(a) **Type of modality:** we investigate children's interpretive preferences for negated deontic necessity modals in the absence/presence of situational context.

- ❖ Previous experimental studies have focused on children's scopal preferences for epistemic modality and negation.
- ❖ Only one study investigates children's scopal preferences for root necessity and negation (Gualmini & Moscati 2008).

(b) **Language:** Romanian.

- ❖ Previous studies looked at English, Italian and Dutch.

(c) **Methodology used:** a ternary reward task instead of a TVJT

(d) **Questions asked:** What is the role of prosody? What is the role of situational context?

The role of prosody in adult and child language

- ❖ Prosody has also been argued to play a part in the interpretation of negative sentences in Romanian.
- ❖ Ionescu (2022) discusses N-words, i.e., universal quantifiers scoping over negation (Giannakidou 1998), and a possible relationship between emphatic stress and interpretation.
- ❖ The emphatic stress carried by N-words may express negative concord.

Astăzi nu mănânc *NIMIC* **Negative concord** (**NIMIC = ANYTHING**)

Today (I) not eat *N-wd-THING*.

'Today I do not eat anything'

Astăzi *NU* mănânc nimic **Double negation** (**NIMIC = NOTHING**)

Today (I) *NOT* eat *N-wd-thing*.

'Today, I do NOT eat nothing (= I eat something).'

The role of prosody in adult and child language

❖ Prosody has been shown to have an important role in interpretation of modals in children and adults:

➤ epistemic stances (encoding disbelief- see Escandell Vidal 1998, Armstrong 2014, 2020, a.o.)

Jeni les dice que vio un tucán.

'Jeni tells them that she saw a toucan.'

Twin 1: Un tucán? ;H*L% (neutral echo)

Twin 2: Un tucán? L*HL% (disbelief echo)

❖ While not fully adult-like, children are sensitive to prosody to a great extent.

=> Romanian children may be (partly) sensitive to the different intonations of *nu trebuie să...* 'not must SĂ...'

The role of context in child and adult language

- ❖ Overall, children tend to perform more adult-like in tasks that are story-based (e.g., Guasti et al. 2005, Bleotu & Roeper 2021 a,b).
- ❖ Crain & Thornton (1996) recommend: whenever a Truth Value Judgment is designed, careful attention should be paid that the sentences children have to evaluate are made plausible through context. 😊

- ❖ Previous studies:

- Musolino & Lidz (2006)

Sentence: Every horse didn't jump over the fence.	
No context	Context
	Every horse jumped over the log but every horse didn't jump over the fence. / contexts creating expectations for successful jumps (Viau, Lidz & Musolino 2010)
a. No horse jumped over the fence. (CHILDREN)	Not every horse jumped over the fence. (ADULTS & CHILDREN)
b. Not every horse jumped over the fence. (ADULTS)	

- Skordos, Myers & Barber (2022) have also recently shown that children are able to correctly a sentence such as *Every girl is riding an elephant* in an adult-like manner (*Not every girl ...*) if given enough context to identify the question under discussion.

The role of context in child and adult language

- ❖ Bleotu, Benz & Pătrunjel (2022) showed that the interpretation of *mustn't* in America English varies with the context in which it is employed (a context favoring an interdiction or a lack of necessity reading)

You mustn't worry. The woman will give you money. (LACK OF NECESSITY)

You mustn't worry. You will get sick otherwise. (INTERDICTION)

- ❖ Dieuleveut, van Doreen, Cournane & Hacquard (2022) found that context plays an important part in producing modal verbs

Deontic necessity and negation in Romanian

Previous findings from Bleotu, Benz & Slăvuțeanu (in progress)

- ❖ In a forced choice task (Who gave an order?), in the presence of contrast, Romanian 5-year-olds could distinguish between unambiguous interdiction modals and unambiguous lack of necessity modals, as well as almost accurately identify interdiction based on the different intonations of *nu trebuie să*.

Forced choice

The girl, mother and grandmother are looking at two fruits: a plum and a pineapple.



Mama îi spune fetei:
Mother tells the girl:

“**Nu trebuie să mănânci pruna**” (*Not-Necessary Intonation*).
not must SĂ.SBJV eat.2sg plum-the
'You need not eat the plum'



Bunica îi spune fetei:
Grandma tells the girl:

“**Nu trebuie să mănânci pruna**” (*Necessary-Not Intonation*).
not must SĂ.SBJV eat.2sg plum-the
'You must not eat the plum'



Forced choice

Who is giving the girl an order?



mama 'mother'



sau 'or'

bunica 'grandma'

Main result: Children could tell two linguistic modal forms apart when set in contrast.

Experiments

- ❖ If children could tell two linguistic modal forms apart when set in contrast, does this mean they are also equally adult-like when encountering these linguistic forms separately?
- ❖ What is their default interpretation of negated deontic necessity modals? If their default is interdiction, it should show in the absence of context.

Without context



With context

Experiments

Intonation Task

Intonation & Context Task

Aim

- ❖ Are children able to interpret interdiction and lack of necessity modals in an adult-like manner in the absence of contrast or situational context?
- ❖ Are children sensitive to prosodic cues?

- ❖ Does situational context boost children's adult-like interpretation of negated deontic necessity modals?

Expectations (arising from previous experiments)

- ❖ Children might interpret lack of necessity as interdiction (based on previous literature- e.g., Gualmini & Moscati 2008)

- ❖ Children are expected to perform more adult-like if supported by the contextual relevance of readings.

Experiments

Intonation Task

Intonation & Context Task

Participants

- ❖ N = 25 children (Mean age: 5;27, Age range: 5-5;11, 12 M, 13 F)
- ❖ N = 37 adults (controls)

- ❖ N = 23 children (Mean age: 5;29, Age range: 5-6, 8 M, 15 F)
- ❖ N= 38 adults (controls)

Experiments

Intonation Task

Intonation & Context Task

Materials

- ❖ 32 sentences addressed by the (grand)parent to the child character of the type *You must not/need not X*.
 - (a) 16 sentences with an ambiguous modal *nu trebuie să*
 - (b) 16 with unambiguous modals (*trebuie să nu* and *nu e nevoie să*)

Experiments



Intonation Task

Intonation & Context Task

Materials

- ❖ 32 sentences addressed by the (grand)parent to the child character of the type *You must not/need not X*.
 - 16 sentences with an ambiguous modal *nu trebuie să*
 - 16 with unambiguous modals (*trebuie să nu* and *nu e nevoie să*)
- ❖ In half of the sentences, the child performed the forbidden/unnecessary action X, while, in the other half, he/she performed the alternative action Y not mentioned embedded under the modal.
- ❖ The materials were recorded and analyzed beforehand in Praat, to control for intonational contours.

Materials

Modals tested	
Unambiguous lack of necessity	Nu e nevoie să... not is need SĂ.SBJV
Unambiguous interdiction	Trebuie să nu... must SĂ.SBJV not
Ambiguous <i>nu trebuie</i> with a lack of necessity intonation 	<ul style="list-style-type: none"> ➤ F0 stays around 400 Hz for <i>nu</i> and the first syllable of <i>trebuie</i> and then drops to 250 Hz . ➤ L accent (Estebas-Vilaplana & Prieto 2010).
Ambiguous <i>nu trebuie</i> with an interdiction intonation 	<ul style="list-style-type: none"> ➤ F0 goes from 230 Hz to 370 Hz (<i>nu</i>) and then to 230 Hz (<i>trebuie</i>). ➤ <i>nu</i> has a contrastive L+>H* accent

Experiments

Intonation Task

Intonation & Context Task

Procedure

Both experiments used a ternary reward task (Katsos & Bishop 2011).

Instructions

Give the child a sad face if he/she does something forbidden, a blue star if what he/she does is so-so, but it is allowed by the (grand)parents, and two blue stars if what he/she does is the best thing, that is, exactly what the (grand)parents asked him/her to do.



Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials: Example of a lack of necessity item

Stage 1

Mama și fata se uită la două fructe: o prună și un ananas.

Mother and daughter are looking at two fruits: a plum and a pineapple.



Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials: Example of a lack of necessity item

Stage 2

No context

Context: Fata merge la masa de dimineață unde regula până ieri era să nu mănânce prune. Dar azi regula s-a schimbat. De azi poate să mănânce orice fruct.

Context: The daughter is getting ready for breakfast, where the rule until yesterday was not to eat plums. But today the rule has changed. Starting with today she can eat any fruit.

Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials: Example of a lack of necessity item

Stage 3

Mama îi spune fetei:
Mother tells the daughter:

Nu trebuie să mănânci pruna. (*Not-Necessary Intonation*).
not must SĂ.SBJV. eat.2sg. plum-the
'You need not eat the plum'

Fata mănâncă pruna.
The girl eats the plum.

Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials

Rewards



Experiments

Intonation Task

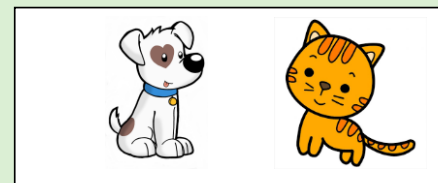
Intonation & Context Task

Procedure & Materials: Example of an interdiction item

Stage 1

Băiatul și tatăl se uită la două jucării: un cățel și o pisică.

The boy and the dad are looking at two toys: a dog and a cat.



Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials: Example of an interdiction item

Stage 2

No context

Context: Băiatul se pregătește să meargă la locul de joacă, unde regula este să nu se joace cu câinele.
Context: The boy is ready to go to the playground, where the rule is not to play with the dog.

Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials: Example of an interdiction item

Stage 3

Tatăl îi spune băiatului:
Dad tells the boy:

“Trebuie să nu te joci cu câțelul.”
must SĂ.SBJV not CL. play.2sg with dog-the
‘You must not play with the dog.’

Băiatul se joacă cu pisica.
The boy plays with the cat.

Experiments

Intonation Task

Intonation & Context Task

Procedure & Materials

Rewards



Experiments

Intonation Task

Intonation & Context Task

Expectations for adults

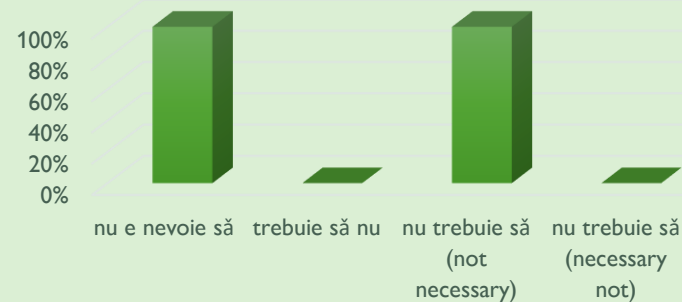
❖ If the character performs action X, we expect adults to give more *one blue star* rewards for *nu e nevoie să* and for *nu trebuie să* with a *Not-Necessary* intonation than for *trebuie să nu* and for *nu trebuie să* with a *Necessary-Not* intonation, where the expected reward is clearly *a sad face*.

❖ Intonation and context should increase the accuracy (of expected rewards) for the ambiguous forms.

Adults: One blue star rewards



Adults: One blue star rewards



Experiments

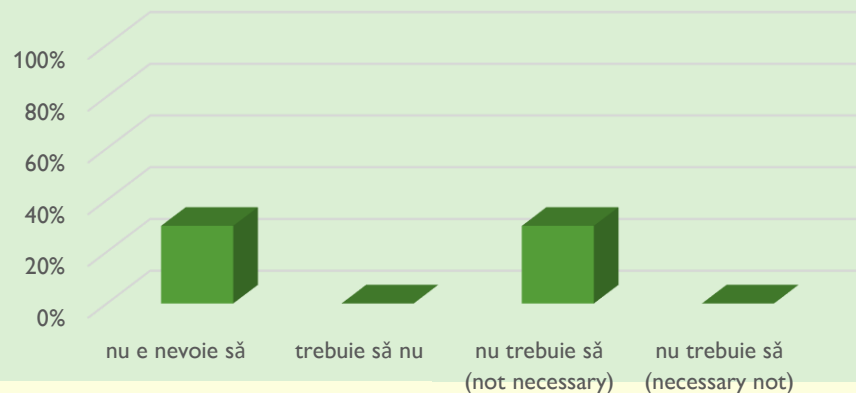
Intonation Task

Intonation & Context Task

Expectations for adults

- ❖ If the character performs action Y, we expect more *one blue star* rewards for lack of necessity modals and more *two blue stars* rewards for interdiction modals.

Adults: one blue star



Experiments

Intonation Task

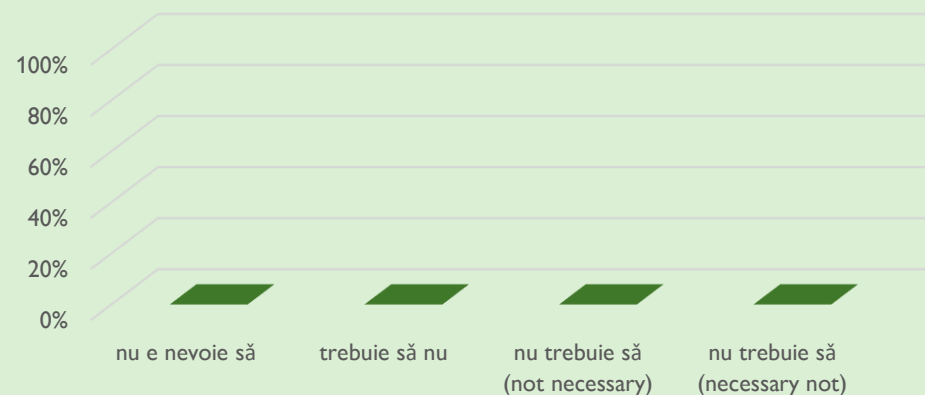
Intonation & Context Task

Expectations for children

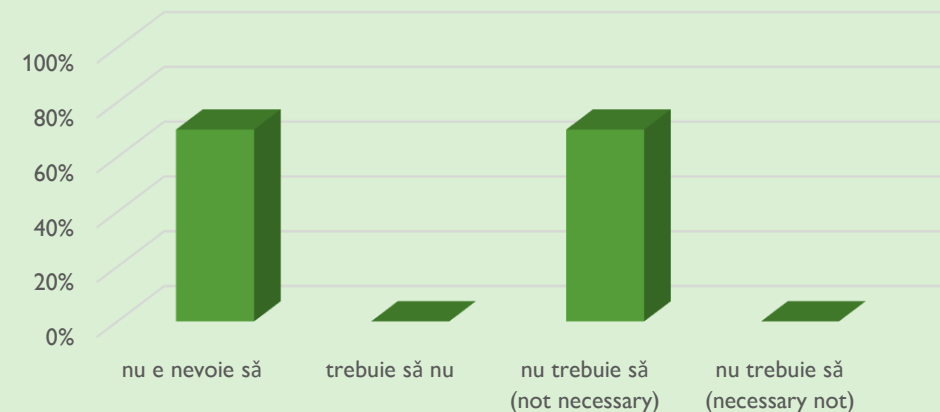
❖ If the character performs action X, if children interpret lack of necessity as interdiction, we generally expect them to give fewer *one blue star* rewards than adults in the same contexts, for all negated modals.

❖ Children's performance should be more adult-like in ***the Intonation & Context Task***, given that children can rely on contextual cues to determine the semantics of negated deontic necessity.

Children: one blue star



Children: one blue star



Experiments

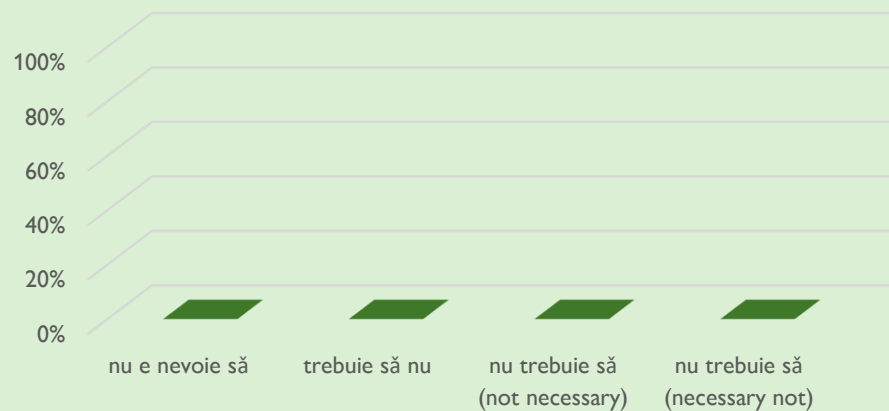
Intonation Task

Intonation & Context Task

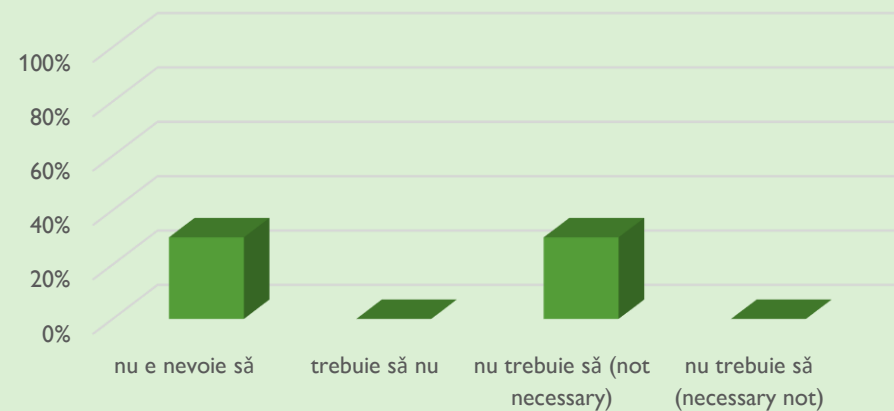
Expectations for children

- ❖ If the character performs action Y, we expect them to give *fewer one blue star* rewards than adults. Instead, they should give *two blue star* rewards.
- ❖ Children's performance should be more adult-like.

Children: one blue star



Children: one blue star



Experiments

Intonation Task

Intonation & Context Task

Results. Group analysis.

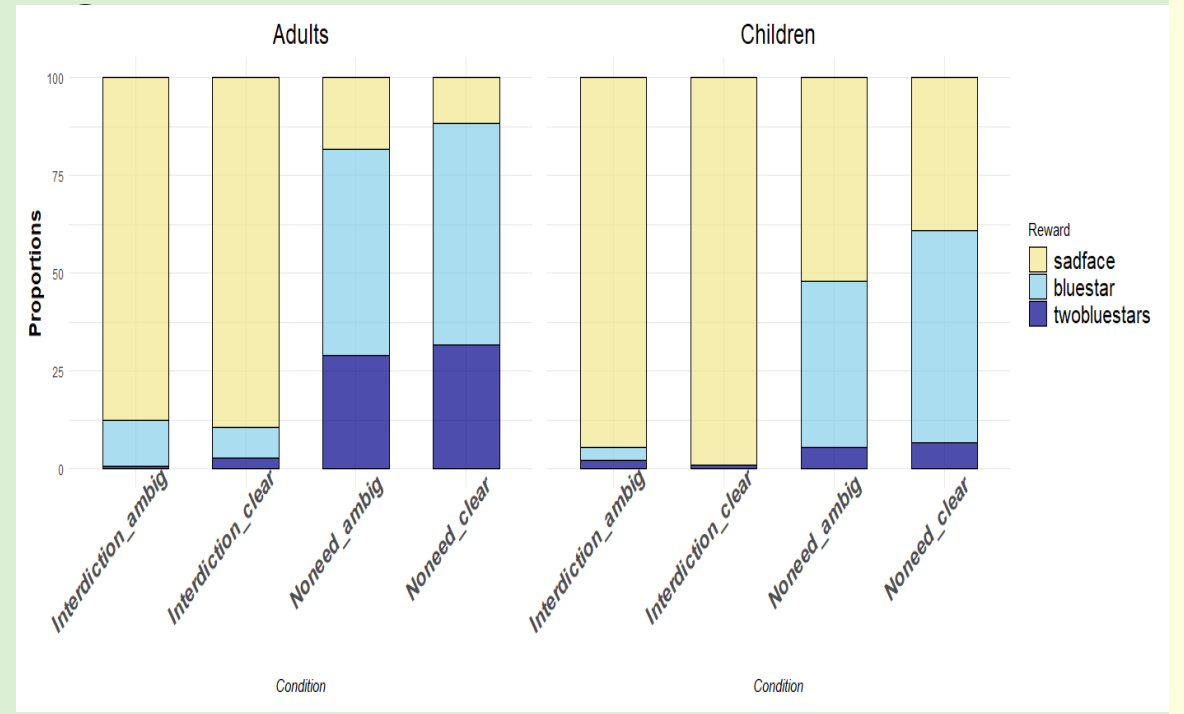
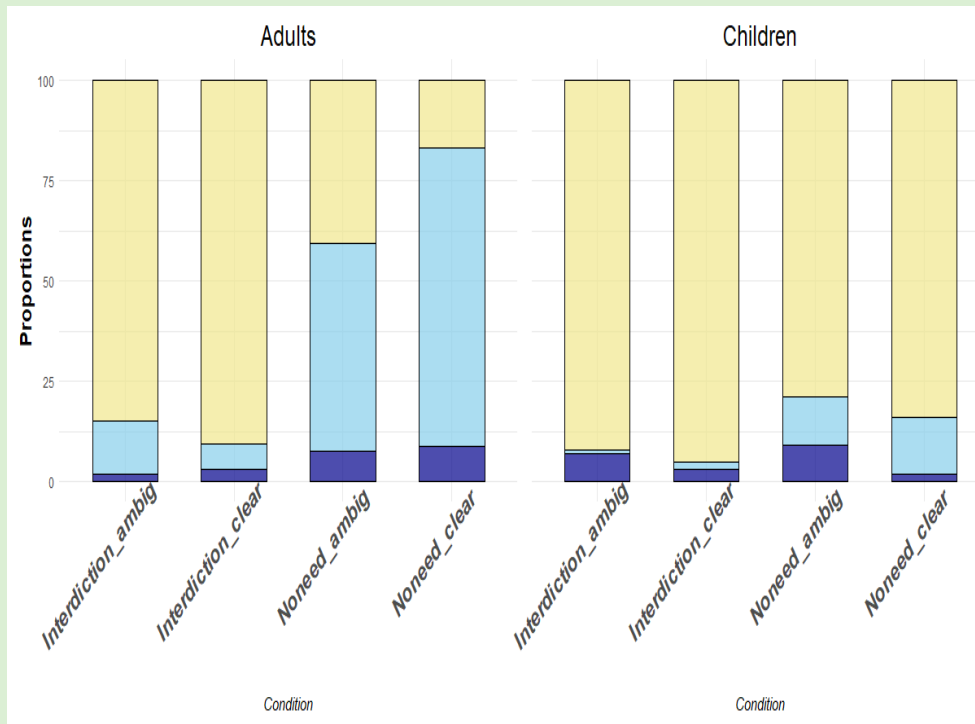
- ❖ Interdiction_ambig = *nu trebuie să* 'not must SĂ' with an interdiction intonation
- ❖ Interdiction_clear = *trebuie să nu* 'must SĂ not' with an interdiction intonation
- ❖ Noneed_ambig = *nu trebuie să* 'not must SĂ' with a lack of necessity intonation
- ❖ Noneed_clear = *nu e nevoie să* 'not is need SĂ' with a lack of necessity intonation

Experiments

Intonation Task

Intonation & Context Task

Results. Group analysis (when the character performs action X)



Experiments

Intonation Task

Intonation & Context Task

Results

- ❖ Children and adults perform alike when the character performs action Y (mostly two blue star rewards).
- ❖ Children and adults mostly differ when the character performs action X
- ❖ Adults reward the character with significantly more *one blue star* rewards (63.15%) and fewer *sad face* rewards (28.75%) after lack of necessity statements (with *nu e nevoie să* or *nu trebuie să* with a *Not-Necessary* intonation) than after interdiction statements with *trebuie să nu* and *nu trebuie să* with a *Necessary-Not* intonation (9.675% blue star rewards, 87.8% sad face rewards).
- ❖ For lack of necessity, children give significantly fewer *one blue star* rewards (13%) and more *sad face* rewards (87.8%) than adults.
- ❖ Children's interdiction preference is confirmed by logistic regressions with Reward type/Interpretation as a DV, Modal, Group as fixed effects, and random slopes per Item, Participant.
- ❖ Children perform in a more adult-like manner: they give more *one blue star* rewards for lack of necessity than before.

Experiments

Intonation Task

Intonation & Context Task

Results. Individual analysis

When the child character performs action X

- ❖ 2 children interpreted ambiguous lack of necessity in an adult-like manner.
- ❖ 5 children were adult-like half of the time.
- ❖ 10 children interpreted lack of necessity as interdiction (5 children interpreted both unambiguous and ambiguous lack of necessity modals as interdiction, 4 children interpreted only ambiguous lack of necessity as interdiction, 1 child interpreted only unambiguous lack of necessity as interdiction).
- ❖ 1 child interpreted half of both unambiguous lack of necessity and ambiguous lack of necessity modals as interdiction.
- ❖ 12 children interpreted both unambiguous lack of necessity and ambiguous lack of necessity modals in an adult-like manner.

Discussion

- ❖ **The Intonation Task** shows that children prefer interpreting all negated deontic necessity modals as expressing **interdiction**.
 - ❖ Children cannot distinguish between the two meanings of *nu trebuie* by relying purely on intonation.
 - ❖ Children interpret weak lack of necessity modals as expressing interdiction.
BUT they never interpret interdiction modals as lack of necessity.
- ⇒ This asymmetry suggests that children start off with a preference for the interdiction reading.

Discussion

How can we account for children's initial preference to interpret lack of necessity as interdiction?

❖ *Negative strengthening?* No.

Unless we assume negative strengthening is automatic, if lack of necessity is primary, and interdiction is derived, then children should have more ease with lack of necessity.

A way out: We could assume children obligatorily move necessity above negation at LF.

❖ *Scaleless implicatures?* No.

We would have to assume children obligatorily strengthen lack of necessity modals to interdiction.

BUT why would we assume children compute certain implicatures obligatorily and rather early, but they compute others optionally and later?

N. B. Children are known to generally derive implicatures to a lower extent than adults (starting with the seminal work of Noveck 2001).

Potential counterargument: Children compute free choice implicatures rather early (Tieu et al. 2015).

Discussion

❖ *Surface scope?* (Lidz & Musolino 2002) No.

Surface scope would predict:

- (a) lack of necessity readings for negated necessity modals in Romanian where negation precedes the modal
(*nu e nevoie să, nu trebuie să*)
- (b) Interdiction readings for negated necessity modals in Romanian where the modal precedes negation
(*trebuie să nu*)

BUT children interpret all negated necessity modals as interdiction regardless of the position of the modal with respect to negation.

Discussion

- ❖ *Premature closure?* (Acredolo & Horobin 1987, Ozturk & Papafragou 2015, Leahy & Carey 2020) Partly.
- ❖ Utterances employing lack of necessity modals involve multiple alternatives.
Nu e nevoie să bei lapte.
'You don't have to drink milk.'
- ❖ The hearer could choose either to drink milk or not to drink milk (and drink something else instead).
- ❖ Interestingly, children seem to consider that the best course of action in this case would be not to drink milk.
- ❖ Children's choices are consistent with *premature closure*: children choose one alternative rather consistently.
BUT Mystery: Why do they always choose the alternative in line with the interdiction interpretation?
- ❖ Additional assumptions: The interdiction targets the mentioned object, which is more salient than the unmentioned object.

Discussion

- ❖ *Preference for strong scope? Yes.*
- ❖ Children initially prefer to assign unique strong scope.
- ❖ in line with similar findings for ambiguous sentences with negation and modality/quantifiers for other languages (Musolino & Lidz 2006, Gualmini & Moscati 2009)

Discussion

- ❖ Children's adult-like performance in the *Intonation & Context Task* shows that situational context is an essential cue in acquisition.
- ❖ Children pragmatically bootstrap meaning from context.
- ❖ In contrast, adults are able to interpret lack of necessity modals as lack of necessity regardless of context.
- ❖ Situational context also boosts children's prosodic sensitivity to the different intonations of the ambiguous *nu trebuie*, which did not show up in the absence of context.
- ❖ Children's acquisition of negated deontic modal meanings is primarily helped by context and secondarily by prosodic cues.

Conclusion

- ❖ Children start off with interpreting lack of necessity modals as expressing interdiction, in virtue of a *strong scope preference*.
- ❖ The acquisition of lack of necessity meanings is largely determined by situational context through pragmatic bootstrapping.
- ❖ In the presence of situational context, children are also able to prosodically disambiguate negated modals.

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