Acquisition of Spanish Mood Selection in Complement Clauses

Pablo E. Requena, Melisa Dracos, and Karen Miller

1. Introduction

The current paper addresses children’s acquisition of complementation, i.e. complex sentences in which a subordinate clause constitutes an argument of another clause (matrix clause) that contains a complement-taking verb. The emergence of complementation is of linguistic and psychological relevance because it marks the onset of complex sentences and because most of the complement-taking verbs consist of internal or mental states (e.g. know, want, think) (Bloom, Rispoli, Gartner, Hafitz 1989). But an additional level of complexity in complementation comes from the fact that in languages like Spanish, the selection of indicative (IND) versus subjunctive mood (SUBJ) is conditioned by semantic/pragmatic and lexical factors even within a certain semantic class of verbs, as well as across individual speakers (Blake 1981, 1983, 1985; Montrul 2004). Examples in (1) below show how some contexts are more categorical in SUBJ use (1a), whereas other contexts display more optionality based on intended semantic/pragmatic interpretation (1b). The use of the SUBJ in (1b) indicates, as it will be described below, that the speaker shares with the mother such disbelief.

(1) a. La madre quiere [que Juan coma].
   the mother want.PRS.3SG that John eat.SUBJ.3SG
   ‘The mother wants John to eat.’

   b. La madre no cree [que Juan coma/come].
   the mother NEG believe.PRS.3SG that John eat.SUBJ.3SG/eat.IND.3SG
   ‘The mother doesn’t believe that John eats.’

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Adult-like use of Spanish finite sentential complement clauses such as those in (1) requires that learners not only comprehend and produce complementation, which happens early (De Villiers, Roeper, & Vainikka, 1990; Thornton & Crain, 1994), but also that they engage in mood selection. Acquisition literature shows that whereas mood choice is acquired early in some contexts, there are strong lexical effects and fluctuations across age groups in other contexts until age 12;0 (Blake 1985). However, previous acquisitionist studies have focused on semantic classes that include many lexical items at the same time, which makes it difficult to find adult mood selection patterns with particular lexical items as well as to document children’s acquisition of such patterns. The following research questions guide our study: What are adult Spanish speakers’ patterns of mood selection with particular complement-taking predicates? and When do children acquire adult-like mood selection in these contexts?

2. Linguistic Background

Complement clauses function as a required argument of a verb, such as the object of a transitive verb in ‘[Sam knew [that the dog ate the cookie]].’ The clause ‘[that the dog ate the cookie]’ is required by the verb ‘know’ used as a transitive verb. Unlike English, Spanish marks the verb of complement clauses with either the indicative (IND) or the subjunctive (SUBJ) mood. The literature that seeks to account for mood selection based on semantic class has identified frequent use of the SUBJ in Spanish sentential complement clauses expressing Volition (e.g. querer que ‘want that’), Evaluation/Comment (es importante que ‘it is important that’), and Belief/Uncertainty (dudar que ‘doubts that’, no creer que ‘not believe that’) (Lastra & Butragueño, 2012). But, as was mentioned earlier, far from a direct one-to-one correspondence between mood (IND vs. SUBJ) and semantic class (Terrell & Hooper, 1974), mood selection varies depending on semantic/pragmatic and lexical factors even within a certain class, as well as across individual speakers (Blake 1981, 1983, 1985; Montrul 2004).

The identification of semantic/pragmatic binary oppositions to try to capture mood alternation (e.g. realis versus irrealis) has proven to oversimplify the phenomenon and to obscure its description. An observation that we have found useful classifies complement-taking verbs and constructions according to their preferences in mood selection. Thus whereas the desiderative / directive complement-taking verb querer ‘want’ rarely takes a complement clause in the IND (Bosque 1990), negated epistemic verbs such as no creer ‘NEG believe’ and factive emotive verbs such as lamentar ‘lament’ or gustar ‘like’ allow the IND/SUBJ alternation. In this sense, Kempchinsky (2009) proposes that “there is a continuum of complementation types, in both syntactic and semantic terms. If lexically selected subjunctive with desiderative and directive predicates is the ‘core’ case, what this means is that it marks one end of this continuum” (p. 1803). The continuum proposed by Kempchinsky would contain SUBJ-selecting predicates (e.g. volition predicates such as querer ‘want’) on one end and IND-
selecting predicates (e.g. certainty predicates such as saber ‘know’) on the other end. What remains between these two ends would be predicates that display gradience in mood selection (see references for studies that suggest a variable description of mood choice over categorical ones in Blake 1983:22). Such gradience could be captured by means of analyses of frequencies of use in spoken corpora or in elicitation studies. Gudmestad (2010:38) conducted a study of subjunctive use in learners and included a native speaker group. The use of SUBJ by the native speaker group was highest with Volition (94.8% or 544/574 contexts), and then followed Comment (83.6% or 372/445 contexts), Uncertainty (53.4% or 258/483 contexts), and Certainty (10.7% or 87/815 contexts) (see Waltermire 2014:121 for similar distribution in New Mexico Spanish). Certainty could be considered the end of the continuum where the IND is categorically selected.

Extensive discussion has been provided on the semantic/pragmatic value of the selection of the SUBJ mood in variable contexts, such as those of Uncertainty. For example, Mejías-Bikandi (1994) proposes that the SUBJ implies that the embedded proposition is being asserted neither by the subject of the complement-taking clause, nor by the speaker. Formally, Kempchinsky (2009) argues that the complement clause can be evaluated with respect to a ‘World’ feature W, which can either be the ‘world’ of the Subject (W(Su)) or the ‘world’ of the speaker (WR), and that “…a language like English, which for the most part lacks a morphological subjunctive, does not overtly mark the shift in modal base” (p. 1799). However, a language like Spanish would exploit the SUBJ when other possible ‘worlds’ become available for interpreting the embedded proposition.

3. Acquisition Background

In this section, we will focus on the acquisition of complement clauses. Given that most of the complement-taking verbs consist of internal or mental states (e.g. know, want, think), the acquisition of complementation is linked to the acquisition of mental state language (Bloom, Rispoli, Gartner, Hafitz 1989, Pascual, Aguado, Sotillo, & Masdeu 2008; Harrigan Hackquard & Lidz 2016). In spite of this syntactically and semantically complex learning task, comprehension and production of complementation happens very early (see Ambridge & Lieven, 2011, for a review).

Most of the research on the development of complement clauses, however, has concentrated on complement clauses within questions where the wh-word is displaced (e.g. De Villiers, Roep, & Vainikka, 1990; Thornton & Crain, 1994). The results have been interpreted as pointing to early comprehension of these clauses (which falls in line with innate knowledge of the necessary elements leading to the emergence of complementation), and the errors that children make in these studies have been attributed to processing limitations. Research following constructivist views of development (e.g. Tomasello 2003) has found that children’s earliest uses of what look like complement clauses in spoken
corpora seem to rather result from the use of fixed hedges such as ‘I think,’ ‘I wish,’ ‘You know,’ ‘That means’ (Köymen, B., Lieven, E., & Brandt 2016:39, and references therein) to which a full clause follows without the use of a complementizer (‘that’), which is grammatical in English. Thus early uses of what seems like ‘complementation’ in fact results from the use of these constructions whose empty slot is occupied by a whole clause rather than the result of abstract knowledge of complementation. The existence of fossilized hedges is also supported by research showing that children make more mistakes with some personal subjects than with others (e.g. ‘I think’ in Diessel & Tomasello 2001). Studies of sentence repetition provide support to piecemeal frequency-driven development of complementation by reporting more accurate repetition of grammatical sentences and more correction of ungrammatical sentences when the stimuli contained frequent complement-taking verbs than when they contained infrequent verbs (Kidd, Lieven & Tomasello 2006). These results have been interpreted as suggesting emergence of complementation from fixed formulae even though the effect of frequency was countered by lexical substitutions of a frequent verb in the stimuli with less frequent ones in children’s repetitions.

Overall, the existing research is inconclusive as to how finite complement clauses first emerge. However, given that the focus of this paper is not to answer by what age children have acquired the ‘essential competence’ for variable SUBJ use, but rather by what age they have acquired ‘maximal competence’ for using adult-like mood selection (Philip 2004), for the remainder of this section we will focus on research on the emergence of the SUBJ in complement clauses and on mood selection. In this way, the present work can be understood as examining the latest stage in the path toward full adult-like mastery of Spanish complement clauses, namely the acquisition of adult-like mood selection.

3.1. Earliest uses of the Subjunctive with Volition

The earliest uses of the SUBJ in Spanish have been attested in negative imperative sentences around the second birthday (Hernández-Pina 1984; López Ornat, Fernández, Gallo & Mariscal 1994, Jackson-Maldonado & Maldonado 2001). By age 3;0 the SUBJ appears in indirect commands (Montrul 2005) as well as in certain adverbial constructions (para que sepas ‘so that you’ll know’, cuando te vayas ‘when you go’ in Blake 1983:22) (see also Sánchez-Naranjo & Pérez-Leroux 2010). Early indirect commands are materialized mainly with the verb querer ‘want’ (Quiero que vengas ‘I want you to come here’, in Blake 1983:22) in what seem to be fixed phrases. Given the predominant use of querer ‘want’ in this context, this use has also been referred to as ‘Volition’. Ferres (2003) tracks the development of querer ‘want’ in Spanish-speaking children from 1 to 4 years of age and finds that, even though the concept of desire is acquired shortly after the second birthday, these early uses are mostly restricted to either fossilized expressions or to repetitions of adult tokens (pp. 159-60).
In a pilot study of the longitudinal corpus Remedi found in CHILDES (Remedi, Requena, & Manoiloff in preparation) we searched for instances of Subjunctive between the ages 1;11 and 2;11 in the speech of VIC, a monolingual child from Argentina. The results (Parent, N = 89 and Child, N = 16) showed very few instances of Evaluation/Comment and Belief/Uncertainty in caregiver speech and none produced by the child. As expected based on previous studies, the only uses of SUBJ by the child were instances of Volition (with the verb querer ‘want’), which this child seems to have acquired by 2;1 (see examples 2-4). This means that together with negative imperatives and some adverbial uses, Volition (a context included in the present study) constitutes one of the earliest uses of the SUBJ mood.

(2) vo(s) queré(s) [:quieres] que yo te tape a vos?
you want.PRS.2SG that I you.DAT cover.PRS.SUBJ.1SG ACC you ‘Do you want that I cover you?’

(3) queré(s) [:quieres] que te haga otro globo?
want.PRS.2SG that you.DAT make.PRS.SUBJ.1SG another balloon
‘Do you want that I make another balloon for you?’

(4) yo quería que andieras [:anduvieras]¹ vos.
I want.IPFV.1SG that ride.SUBJ you
‘I wanted that you would ride’

Blake (1983) administered a sentence completion task in order to elicit mood selection across semantic classes in Spanish-speaking children ages 4;0 – 12;0 and a group of monolingual adults. The design consisted of 40 items that tested forty different lexical constructions. Of interest for the purpose of this paper is the fact that apart from testing Volition (see above), Blake included items of Comment (‘Attitude’), Uncertainty (‘Doubt’), and Certainty (‘Assertion’). Here we will report on his results for Volition and in the next section we will report on the other conditions. For Volition (which Blake calls ‘Command’ and anticipates categorical SUBJ), the study reports that children begin to increasingly approximate adult use between 4;0 and 5;0, but at 6;0 they move away from adults to then return to high levels of SUBJ use, even outperforming adults between 7;0 and 12;0. Blake interprets the children’s results as suggesting item-based acquisition performing at adult-like levels (or even better) after age 6;0. The unexpected non-categorical use of SUBJ by adult participants was adjudicated to inattentiveness or to the written administration of the elicitation task to that participant group, as opposed to the oral administration used with child participants. This constitutes one of the limitations of Blake’s study, since the adult norm is already difficult to determine due to the lexical variation within each semantic class.

¹ The only inaccurate use of the subjunctive by the child at 2;11 (example c) constitutes a clear attempt to use the irregular verb form anduvieras ‘ride[SUBJ]’
3.2. Uses of the Subjunctive with belief terms

As mentioned above, given that desire terms like *querer* ‘want’ emerge early, uses of this verb in complement-taking contexts also appear early (around the second year of age). We also reviewed above how mood choice with Volition has been reported to reach adult levels after 6;0. Belief terms (i.e. those verbs to talk about thoughts and beliefs, such as ‘know’, ‘think’, ‘believe’, ‘forget’), however, appear much later than desire terms. The first uses of belief verbs have been attested toward the middle of children’s third year and increase in frequency until their fifth year (Pascual et al. 2008, and references therein). Pascual et al. also mention that these early uses of belief terms are mechanical (formulae) rather than the result of genuine intentional states.

As to mood selection with these complement-taking predicates, we will concentrate on Certainty (e.g. *saber* ‘know’, *darse cuenta* ‘realize’, *ser obvio* ‘be obvious’), Comment (e.g. *alegrarse* ‘be glad’, *gustar* ‘like’, *estar feliz* ‘be happy’), and Uncertainty (e.g. *dudar* ‘doubt’, *no creer* ‘not believe’). Blake (1983) reports that for Certainty (which is expected to result in categorical IND) all age groups, including the adults, showed less than 80% use of the IND. This was not only unanticipated, but also difficult to explain. For Comment, Blake reports a U-shaped pattern, where children ages 8;0 and 9;0 do worse than younger children (i.e. choosing more IND), and it is after age 10;0 that they begin to approximate adult levels. For Uncertainty, Blake reports a significant decrease of IND after 4;7 and dramatic fluctuations in older children until age 10;0 when they begin to approximate adults, a process completed by age 12;0.

The conclusion reached by Blake was that some contexts (Adverbial Clauses and Volition) are acquired before others (Comment and Uncertainty), which reach adult levels somewhat later, at around age 10. Other points highlighted by Blake were the variable (or ‘confusing’, in Blake’s words) nature of mood selection as well as its gradual development tied to individual lexical items. The unexpected adult performance together with the fact that each lexical item was tested only once make it challenging to use Blake’s results to address specific questions as to the acquisition of mood selection. Thus, a study of mood selection in complement clauses needs to focus on a limited number of contexts at a time and test particular lexical items more than once in each condition in order to provide useful data as to the target use of the SUBJ with particular predicates in the adult group, and the acquisition path in children. In the following section, we report on a study designed following Blake (1983), in which these aspects were taken into consideration.

4. Experiment
4.1. Participants

Forty-one monolingual Spanish-speaking children participated in the study. Children were divided into four groups: eleven 4-year-olds (4;2-4;9), ten 5-year-
olds (5;0-5;5), ten 6-year-olds (6;3-6;10), and ten 7-year-olds (6;11-7;8). The children were recruited at three schools in Córdoba, Argentina. Written consent from the parents was collected and oral consent from each child. Only participants who provided their consent were tested. Thirteen Argentine adults from the same local area were also tested to determine the adult norm.

4.2. Method, materials and procedure

A Sentence Completion Task was used to test children’s mood selection in four different conditions: Volition, Comment, Uncertainty, and Certainty. Unlike Blake’s (1983) study, in which each lexical construction was tested only once, here one lexical construction was used across the four trials of each condition (Figure 1) for a total of 16 experimental trials. Two practice trials were conducted prior to the experimental trials.

In each experimental trial, the experimenter presented an image together with a context ‘story’ (see Figures 1-4 for sample trials per condition). Then the experimenter said Completá lo que digo ‘Complete what I say’ followed by a matrix clause expressing either Volition, Comment, Uncertainty, or Certainty as well as the complementizer that requires a finite complement clause. The participant then proceeded to complete the sentence with a subordinate clause that requires mood selection. All four trials of each condition were presented together.

Children were tested in a quiet room in elementary schools and daycare centers. Adults from the same community were also tested in a quiet room in their homes.

Figure 1. Sample trial Volition condition – Expected response: SUBJ

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2 The underlined sections are the expected responses to be provided by the participant.
La señó está corrigiendo las pruebas. A esta nena le gusta sacar buenas notas, y eso a la señó la hace feliz. ¡Mírala su cara! Completá lo que yo digo: **Siempre, la señó está feliz de que la nena...**

‘The teacher is grading the tests. This girl likes getting good grades and that makes the teacher happy. Look at her face! Complete what I say: **Always, the teacher is happy that this girl...**’

Expected response: …**saca-IND /saque-SUBJ buenas notas.**

‘**gets good grades.**’

Figure 2. Sample trial Comment condition – Expected response: VARIABLE

Ellos jugaban al fútbol cuando de repente les fue la pelota al otro lado del río. Este chico quiere buscarla. ¿Va a saltar el río? El primo no cree. Completá lo que yo digo: **El primo no cree que el chico...**

‘These two were playing soccer when suddenly the ball fell to the other side of the river. This boy wants to get it. Is he going to jump to the other side? His cousin doesn’t believe so. Complete what I say: **The cousin does not believe that the boy...**’

Expected response: …**salta-IND /salte-SUBJ el río.**

‘**is going to jump (over) the river.**’

Figure 3. Sample trial Uncertainty condition – Expected response: VARIABLE
When children don’t drink milk, they don’t grow up healthy. Isn’t it true? But this grandma is not worried because she knows that the girl loves having milk. Complete what I say: The grandma knows that the girl always…

Expected response: …toma-IND/*tome-SUBJ la leche. ‘has milk.’
Unlike these two conditions, in the Comment condition where categorical SUBJ was also expected based on adult performance, child data shows that by age seven children were still entertaining greater variation than the adults. Individual group results captured two stages in the development of mood selection with está [adj] de que... ‘is [adj] that...’ in this condition. In a first stage, at age 4;0, children differed significantly from adult use (66%, [t(10) = -3.32, \(p = 0.008\)]). The second stage that this study has captured, between 5;0 – 7;0, was characterized by mood selection that trended toward being different than that of the adults, albeit not significantly different from adult use (5-year-olds (93%): [t(9) = -1.96, \(p = .081\)]; 6-year-olds (83%): [t(9) = -2.09, \(p = .066\)]; 7-year-olds (88%): [t(9) = -2.23, \(p = .052\)]. Thus, while the children were approximating adult use, the time window of the present study did not capture the age at which they become fully adult-like in this condition, using SUBJ categorically as the adults in this study did.

Children’s mood selection in the Uncertainty condition shows a more puzzling picture, where by age 7;0 they were not adult like (77% SUBJ) in the variable distribution of IND versus SUBJ with no cree que... ‘does not believe that...’. Actually, at the ages of 6;0 and 7;0, children seemed to become less adult-like in their preferences for mood selection. The 4- and 7-year-old groups performed significantly differently from the adults (4-year-olds, [t(22) = -3.05, \(p = .006\); 7-year-olds, [t(21) = -3.38, \(p = .003\)], yet the 5-year-olds produced rates of SUBJ similar to the adults, [t(21) = -.125, \(p = .902\)]. While the rate of SUBJ in the 6-year-old group decreased, they also did not perform significantly differently than the adults, [t(21) = -1.63, \(p = .118\)]. We believe that the differences found between the children and adults in this condition can be attributed to both overall development and also to adult patterns in the input.
5. Discussion and conclusion

Based on evidence that mood selection in Spanish is constrained by the lexical nature of the verb, the present study addressed mood selection by means of an experimental design where four sentence completion trials elicited finite complement clauses with four selected matrix verbs/constructions. In this way, the present study has improved on the design used previously. This has resulted in more reliable information about adult use (first research question), which enabled us to set clearer predictions for child language (second research question). The results from adult speakers were used to identify matrix verbs/constructions which categorically select IND (saber ‘know’) or SUBJ (querer ‘want’, estar [adj]... ‘be [adj] that...’) as well as a matrix verb which displays variation in mood selection (no creer ‘not believe’) in the context of this task. We identified the learning task as one in which, in order to master Spanish finite complement clauses (‘maximal competence’), the child needs to also match the distributions of mood selection in the input. Thus, the question we have tried to answer in this paper is when children acquire such maximal competence in mood selection with particular complement taking predicates.

The results from a sentence completion task with children ages 4;0 to 7;0 have shed light on when this may happen. Children in the present study mastered the categorical mood selection5 and, even though they are beginning to pattern like adults, at age seven they have not become adult-like in their use of SUBJ with the Uncertainty matrix, which displays variable mood selection. As mentioned earlier, this study has not been able to capture the age at which children reach adult-like rates of SUBJ use with no creer ‘not believe’ (Uncertainty). Two sources for this can be hypothesized, one being the fact that mood choice is variable in the input with this matrix verb (as evident in adult results) so, even though all children in our study gave evidence of knowledge of such variability, it might just take longer for the child to acquire its distribution in order to match that of the adults. The other hypothesis is that, despite the fact that most of the complement-taking verbs consist of internal or mental states (e.g. know, want, think), conveying the mental state meaning expressed by no creer ‘not believe’ might require further cognitive development than conveying the desire meaning of volition (e.g. it may require the ability to deal with counterfactuals and hypotheticals). Coupled with this idea, it might also be the case that the lower frequency of creer ‘believe’ in the input (compared with querer ‘want’) may account for children’s difficulty extracting the distributions (as shown for variable morphosyntax, Shin 2016).

5 The reader should note that for one of the categorical conditions (Comment) at age 7 children are not significantly different from the adults, but by a very small margin (p = .052). This could signal some greater difficulty with this categorical context compared to the other categorical contexts (Certainty and Volition). Such difficulty may lie in the fact that, even though it was not attested in the present study, this condition has been shown to allow variable mood selection.
The study we presented here has shown that children progressively gain maximal competence in mood selection in a piecemeal fashion depending on the matrix verb. Whereas adult-like use of the SUBJ is acquired very early with some matrices, it takes longer with others. The acquisition of the adult-like distribution of mood with no creer ‘not believe’ is found to occur after age seven in what can be considered a very long learning process. Future studies should seek to answer how long it takes for the Uncertainty context with no creer to achieve adult-like mood selection as well as examine additional lexical constructions (testing each across multiple trials as in the present study) in order to determine whether other Uncertainty complement-taking verbs/constructions do in fact show a similar level of semantic complexity resulting in just as long of a learning process.

References

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