

Acquiring Spanish Psych-Verbs: Maturation or Continuity?

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1. Introduction

Gómez Soler (2011) claimed that the unaccusative psych-verb *gustar* ('to like') (Belletti & Rizzi, 1988; Parodi-Lewin, 1991) was acquired early and almost flawlessly by Spanish monolingual children. This was a surprising finding because this verb, depending on its configuration, can include an A-chain or lack an external argument. According to the Maturation Hypothesis (Borer and Wexler, 1987, 1992; Babyonyshev et al., 2001), which states that constructions with A-chains and those without an external argument cannot be acquired until age 5 or 6, we would expect the *gustar*-sentences to be maturationally delayed. However, as we just saw, this is the opposite of what I found in my earlier study. This paper is a follow-up to the aforementioned article. The previous study is based on a CHILDES search, which analyzes production data of the verb *gustar*. The main goal of the current study is to determine if these claims are consistent with comprehension data and if they hold for a wider range of Spanish psych-verbs.

There are two main questions that emerge when we think about the acquisition of psych-verbs: 1) How do children acquire the non-canonical argument structure of these verbs? And 2) Are children able to acquire a construction that involves an A-chain and/or lacks an external argument? In this paper, we will focus on the second question; however, our findings will shed some light on the first one as well.

In being able to answer question #2, this study presents an advantage over earlier works on maturation; specifically, it provides a more articulated and detailed argument against the Maturation Hypothesis. This is because Spanish class III psych-verbs allow us to examine both these versions of this hypothesis: According to one version (A-Chain deficit Hypothesis, ACDH) children cannot form A-chains. According to another (External Argument requirement Hypothesis, EARH) children cannot tolerate the lack of an external argument. Previous data has been brought to bear on either of these two approaches. Psych verbs of class III in Spanish can involve the raising (A-movement) of an argument to subject position (=A-chain). But they may also leave both arguments in VP resulting in no external argument. Thus, we can test the ACDH with the former configuration of arguments and the EARH with the latter.

The findings of this study clearly refute the predictions of the Maturation Hypothesis as a universal theory of language acquisition because psych-verbs (with and without A-movement) are comprehended at an early stage. This supports Gómez Soler's (2011) production findings. This project corroborates the idea that children's ability to deal with unaccusativity comes from UG and it also supports the Continuity Hypothesis of language acquisition (Pinker 1984), which argues that UG is fixed throughout the language acquisition process.

This study is organized as follows: section 2 provides an analysis of psych-verbs belonging to class III. Section 3 presents an overview of the possible sources of difficulty that these predicates pose for the language learner. Section 4 presents a comprehension experiment on Spanish unaccusative psych-verbs. Section 5 provides a theoretical explanation for the findings of the experiments. Finally, section 6 presents the conclusion of this project.

2. Psych-Verbs

In this section I will present some background information about psych-verbs and why they are interesting from the perspective of theoretical linguistics and acquisition theory.

2.1. What Are Psych-Verbs?

Psych-verbs, that is, verbs that express psychological states, represent a challenge for both linguistic theory and acquisition theory. First of all, the goal of linguistic theory is to explain the universal constraints that underlie all languages. One of these universal constraints is the Projection Principle, which states that lexical information (such as θ -roles) is syntactically represented at all levels: “Representations at every syntactic level (D-structure, S-structure, LF) are projected from the lexicon in that they observe subcategorization properties of lexical items” (Chomsky, 1981). Typically, Agent or Experiencer roles are mapped to the subject position and the Theme role is mapped to the object position, according to the Thematic Hierarchy (Jackendoff, 1990). However, psych-verbs seem to violate this principle because they present an apparently arbitrary mapping between thematic roles and syntactic positions. B&R (1988) divide psych-verbs into three classes. These three classes have the same θ -grid involving an Experiencer and a Theme. However, these arguments are mapped onto three different syntactic configurations:

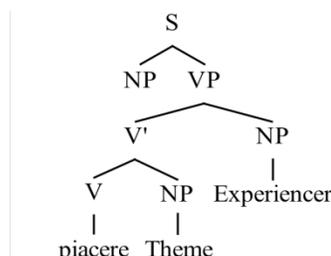
- | | | |
|--|---|---|
| <p>1) Class I (<i>temere</i>) Gianni teme questo <i>Gianni fears this</i></p> | <p>2) Class II (<i>preoccupare</i>) Questo preoccupa Gianni <i>This worries Gianni</i></p> | <p>3) Class III (<i>piacere</i>) a. A Gianni piace questo <i>To Gianni pleases this</i> b. Questo piace a Gianni <i>This pleases to Gianni</i></p> |
|--|---|---|

Class I and II appear to be transitive structures but the mapping of θ -roles to syntactic positions is reversed in the second class. In class I the Experiencer is the subject and the Theme is the object. In contrast, the Experiencer functions as the object and the Theme functions as the subject in class II. Class III has a dative Experiencer that can function as the subject.

Secondly, psych-verbs are also interesting for acquisition theory because they represent a learnability problem for the language learner. On the one hand, the learner has to understand this non-canonical mapping of thematic roles to syntactic positions. On the other hand, she has to realize that the surface structure of these verbs does not correspond directly to the deep structure.

B&R (1988) proposed an analysis of psych-verbs that explained that the apparently arbitrary mapping of thematic roles to syntactic positions was governed by “strict principles” (p. 293). The structure they propose for class I is a simple transitive structure. On the other hand, they argue for an analysis of Italian psych-verbs of class II and III as unaccusatives. Note that the D-structure they proposed for *piacere* is a double object construction with a non-thematic subject position. Both the Theme and the Experiencer are projected as internal arguments. Either the Experiencer or the Theme can move to the subject position [Spec IP] in S-structure (p. 335).

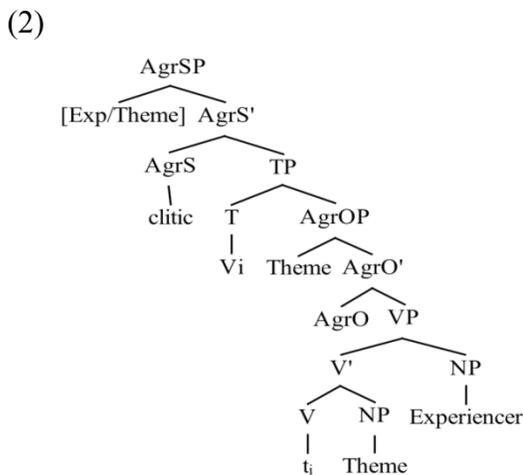
(1)



According to Belletti and Rizzi, this D-structure obeys the Thematic Hierarchy, which expresses the order of prominence among θ -roles: (Agent (Experience (Goal/Source/Location (Theme)))) (Jackendoff, 1990). Later, this hierarchy is mapped onto the syntax according to the Uniformity of Theta Assignment Hypothesis (UTAH): “Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure” (Baker, 1988, p. 46). In conclusion, class III psych-verbs can be analyzed as unaccusative verbs in which both the Experiencer and the Theme are projected as internal arguments at D-structure. At S-structure, either the Experiencer or the Theme raises to the subject position¹.

2.2. Spanish Unaccusative Psych-Verbs

There is a general assumption in numerous studies that B&R’s typology is applicable to Spanish (Franco, 1990; Parodi-Lewin, 1991; Franco and Huidobro, 2003). Despite the fact that Spanish does not have clear tests to prove the unaccusative status of its predicates such as the auxiliary distinction or the ne-cliticization tests that we find in languages like Italian, the aforementioned researchers have shown that Spanish class III behave syntactically like we expect based on B&R’s classification. In (2) I present the syntactic structure of *gustar* based on Montrul (1995):



In the next section, we will present the challenges that this type of verb presents for acquisition theory.

¹ In Spanish, we also have the possible configuration in which both arguments remain within the VP.

3. Why might Class III Psych-Verbs Present a Problem for L1 Learners?

3.1. The Maturation Hypothesis

3.1.1. Arguments for Maturation

The Maturation Account was first proposed by B&W (1987). They claim that certain properties of linguistic principles take time to develop. In particular, they explored the maturation of A-chains, that is, argument-chains that link an argument that has been moved through A-movement. A-movement is movement of an XP (normally an NP/DP) into an argument position. Typically, it involves movement into the canonical subject position, SpecIP. In (3-4), I present an example of A-movement and the resulting A-chain in the passive construction *The house was painted*:

- (3) a. e was painted the house
b. The house_i was painted [t]_i

- (4) A-chain: <the house_i, t _i>

Secondly, B&W (1987) studied children's difficulty with passives and believed that children's delay in specific kinds of passives comes from an inability to connect the NP to its trace and assign it a thematic role. Borer and Wexler (1987) argued that children's early passives should be analyzed as adjectival passives instead of verbal passives. The main difference between verbal and adjectival passives is that while the former involve movement, the latter do not. (5) is an example of an adjectival passive whereas (6) is an example of a verbal passive:

- (5) The doll is torn

- (6) a. e is torn the doll
b. The doll_i is torn [t]_i

They considered that once the mechanism for forming A-chains matures, children would be able to form verbal passives. The prediction of this hypothesis is that children will have difficulty with any kind of structure that involves an A-chain. Some instances of those structures are passives, and raising or unaccusative verbs. In fact, B&W (1987) supported their theory with data from English and Hebrew passives and causative structures.

B&W (1992) presented a revised version of the Maturation Hypothesis in order to deal with some counterevidence. The VP-Internal Hypothesis (Koopman and Sportiche, 1991), the idea that the subject of a sentence moves from spec VP to spec IP in all main clauses, is widely accepted in generative linguistics. This is an example of A-movement since the subject moves from one A-position to another. The fact that children present no difficulties with this kind of movement was used as evidence against the Maturation Hypothesis. B&W (1992) responded to this criticism by revising their initial version of the Maturation Hypothesis. They stated that it was only *non-trivial A-chains* (those which involve two theta positions) that are problematic for children. Subject movement according to the VP-Internal Hypothesis is a *trivial A-chain*, since only spec VP is a θ -position, and thus they are unproblematic for children. On the other hand, the A-chain in a passive construction is a *non-trivial A-chain*. The internal argument moves from its

original position as sister of VP, which is a θ -position to spec VP, which is also a θ -position. Later, it moves to spec IP, which is not a θ -position. However, it is the first link of this chain, which links two θ -positions, what presents a problem for L1 learners.

Babyonyshev et al. (2001) provided further support for the Maturation Hypothesis. Their support comes from an analysis of the acquisition of Russian unaccusatives. In particular, they studied the genitive-of-negation construction with unaccusative verbs. They stated that when children are apparently using a structure, which involves A-movement and lacks an external argument, they are really using an s-homophone (syntactic homophone). This was the case with passives (children use adjectival passives, which have the same S-structure as verbal passives). They also assumed that children analyze unaccusative verbs as unergative verbs. The former but not the latter involve an A-chain and lack an external argument. However, in the genitive-of-negation construction it is not possible for the child to use an s-homophone. The reason for this claim is that the genitive of negation is restricted to base-generated objects, that is, either the object of a transitive verb or the only argument of an unaccusative verb. This genitive inflection cannot be used with arguments that are base-generated in the subject position such as the subject of a transitive verb or the subject of an unergative verb. A-movement in this construction, then, is covert rather than overt. In this way, they had an objective test to ascertain if the child is using an unergative homophone since the unergative homophone will be morphologically different from the unaccusative verb. Only the latter but not the former will be inflected for genitive case.

They found that children perform poorly in this construction since they can't use an unergative structure and do not have the necessary mechanisms to form an unaccusative structure. This is the pattern predicted by B&W's Maturation Hypothesis. This is what Babyonyshev et al. (2001) named the A-Chain-Deficit Hypothesis, that is, children cannot produce/understand passives and raising or unaccusative verbs because of an inability to link the two elements of an A-chain. On the other hand, they present a new and slightly different formulation of the Maturation Hypothesis: the External Argument Requirement Hypothesis, which predicts that children's difficulty with this kind of structures stems from their inability to deal with the absence of an external argument.

The two versions make the same predictions with regard to the genitive-of-negation construction: absence of the construction in children's speech and absolute lack of comprehension of this structure. Since this correlates with Babyonyshev et al.'s (2001) findings, they claim that their study provides support for both versions of the Maturation Hypothesis.

Since the genitive-of-negation construction with unaccusative verbs both lacks an external argument and contains an A-chain, we cannot discriminate between the two hypotheses. On the other hand, there are certain types of structures, which would allow us to distinguish between the ACDH and the EARH since the two hypotheses make different predictions with regards to these structures:² for constructions that lack an external argument and an A-chain (for instance, finite complements embedded under raising verbs), the ACDH predicts them to be unproblematic while the EARH predicts them to be problematic. On the other hand, constructions that have an external argument and A-chains (for instance, reflexive clitic constructions in Romance Languages) are predicted to be unproblematic for the EARH but problematic under the ACDH.

² Torrens et al. (2006) analyzed Spanish Experiencers with psych-verbs. They argue that their data provides support for the EARH. However, it is not clear in their article, which is the syntactic analysis that they assign to these constructions. Due to this fact, I am unable to evaluate their argument.

With regard to my data, we will be able to provide independent evidence against both the ACDH and the EARH. This will be presented in section 4.

3.1.2. Arguments against Maturation

The Maturation Hypothesis has been severely challenged by numerous researchers on the basis of children's early acquisition of unaccusative verbs and verbal passives. Pierce (1992) and Déprez and Pierce (1993) showed that children were able to raise the internal argument of an unaccusative verb resulting in SV order. Thus, the order SV in which the internal argument remains in its original position is exceptional. Snyder et al. (1995) studied the acquisition of auxiliary selection with reflexive clitics in French and Italian. Reflexive clitic constructions are regarded as having an unaccusative structure (Marantz, 1984). They found that children select the right auxiliary with clitic pronouns much earlier than the Maturation Hypothesis predicted (earlier than 4).

Early knowledge of verbal passives has also been reported by several researchers. Pinker, Lebeaux and Frost (1987) proved that children were able to produce and comprehend passives with nonce verbs by 3 years of age. Pye and Quixtan (1988) studied the "precocious" development of passives by children learning Quiché Mayan. Demuth (1989) showed that children acquiring Sesotho, a Bantu language, produced and comprehended verbal passives as early as 2;8. Maratsos et al. (1985) and Fox and Gorzinsky (1998) presented evidence from early knowledge of the passive in English.

The current project, in line with the experimental studies presented in this section, provides further evidence against the Maturation Hypothesis.

3.2 The Markedness Hypothesis

According to the Markedness Hypothesis (Chomsky, 1969; Clark, 1970; Kiparsky, 1974; Phinney, 1981), marked constructions (i.e. infrequent constructions or those lacking generality) are harder to acquire than unmarked constructions. The class III psych-verb construction is marked in two respects: first, it has a dative subject that has some quirky characteristics (oblique case and lack of subject-verb agreement). Second, the alignment of arguments is non-canonical since both the Theme and the Experiencer can occupy the subject and the object position in the sentence. Thus, the prediction is that this construction will be acquired later than a sentence with an agent subject and a canonical alignment of arguments (Subject (*agent*)-Verb-Object) since the latter is unmarked while the former is marked.

This possibility, although interesting, has not been empirically tested in this paper. One recent study seems to point to the conclusion that it is actually not the case and that dative subject constructions appear after nominative subjects construction. Usha Rani and Sailaja's (2004) study of the acquisition of Telugu's non-nominative subjects indicates that children from an early age are able to interpret both nominative and dative marked NPs as subjects. However, since the exact age for the acquisition of the nominative subject is not provided, the Markedness Hypothesis is neither supported nor contradicted.

My results seem to point in the same direction as Usha Rani and Sailaja's since children acquire psych-verbs really early. Also, they seem to perform equally with psych-verbs and control verbs, which have a nominative subject (section 4.3.5).

4. Empirical study

4.1 CHILDES Study

Gómez Soler (2011) showed that children between ages 1;10 and 4;11 produce sentences with the verb *gustar* almost flawlessly. Besides, sentences with and without A-movement are produced equally accurately. So, neither A-chains nor the lack of external arguments seem to pose problems for these monolingual children.

4.2 Experiment 1: Truth-Value Judgment Task

4.2.1 Goals

The main goal of this comprehension experiment was to ascertain if 3 and 4-year-olds were able to comprehend sentences with A-movement and those lacking an external argument with psych-verbs other than *gustar*. Also, I wanted to determine whether they obtained better results with sentences with A-movement or sentences without A-movement in order to test both versions of the Maturation Hypothesis.

4.2.2 Participants

Sixty-two 3 and 4-year-olds participated in this experiment. All the subjects were monolingual Spanish speakers and they all attended the same school. The data of 12 children had to be discarded due to methodological problems. Additionally, the data of 15 children had to be discarded due to the fact that these children showed a clear true/false bias as ascertained by responses to fillers. Finally, the data of 35 children was taken into account for analysis. 15 of these children were 3-year-olds and 20 were 4-year olds.

These children are considerably older than the children in the production study. The reason for this is not that we believe children cannot understand this construction before age 3. However, testing for comprehension of psychological predicates is challenging because these predicates cannot be easily drawn, represented by pictures, acted out with toys et cetera. Due to these restrictions, the most appropriate way of testing these predicates is the truth-value judgment task. Because of the demands of the task itself (i.e. relatively long attention span, knowing the difference between true and false, understanding the reward/punishment mechanism among others), it cannot be used with children under three (Gordon, 1996). That is why 3 and 4-year-olds were tested, although my assumption is that children comprehend these constructions before that age.

4.2.3 Procedure

The experiment was a truth-value judgment task (Crain and Nakayama 1987). Before the task, the experimenter started with a warm-up to ascertain, firstly, if children were able to distinguish between a true fact and a false fact and; secondly, if they were able to understand the task itself. If the child was able to do both, the experimenter proceeded to carry out the task.

The experimenter used two puppets during the task: Mickey Mouse and a sea monster (that the children named Dragon). The experimenter told the child she was going to tell her something about Mickey, and then Dragon was going to repeat it. However, she had to pay attention because Dragon did not always tell the truth. Then, the experimenter asked the child if she could

help her find out which of the things Dragon said were true and which were not by feeding him a cookie if he said the truth and a piece of broccoli if he lied. Finally, the child was asked why she considered that what Dragon said was true or false to make sure the child answered correctly for the right reasons (or the reasons the experimenter had in mind). The children were rewarded with a sticker at the end of the task.

One example of the task would be the following: The experimenter said: *La fruta favorita de Mickey es la naranja pero él odia la manzana* (“Mickey’s favorite fruit is oranges but he hates apples”). Then Dragon would say: *A Mickey le gusta la naranja* (“Mickey likes oranges”). The experimenter repeated the test item no more than three times, after that; if the child did not respond, the child’s response was coded as “No Response.”

There were two types of items: test sentences and fillers. The test sentences had two word orders with different positioning of the arguments: half of the items were coded as ‘preverbal’; these were items in which the Experiencer was placed before the verb. The other half was coded as ‘postverbal’, that is, both the Experiencer and the Theme remained in the VP and thus appeared after the verb. So the orders were: Experiencer-Verb-Theme and Verb-Theme-Experiencer. There were four different psych-verbs included in the test items: *gustar* ‘to like’, *encantar* ‘to love’, *faltar*³ ‘to lack’ and *dar asco* ‘to find something disgusting’. There were an equal number of true and false items. All of these variables were manipulated within subjects.

The fillers were sentences that contained control verbs. The verbs used were *querer* ‘to want’ and *intentar* ‘to try’. There were also an equal number of true and false fillers. There were four different versions of the tests. Each child was tested on 8 test sentences and 4 fillers. Each filler was introduced after two test sentences. The fillers were included in the set in a way such that the answer to the previous test sentence was taken into account. That is, if the child answered true to a test item, then the following filler would be a sentence that targeted a negative response. The experiment was designed in this way in order to detect any true/false bias. The order of the sentences was pseudorandom.

4.3.4 Results

The contrasts were done within a logistic regression model adjusting for multiple observations within subjects. First of all, I compared the children’s performance in the preverbal sentences combining all verbs (i.e. sentences in which the Experiencer argument was preposed, which are those that exhibit A-movement) with their performance in the postverbal sentences (i.e. those that do not exhibit A-movement). The means found were 67% correct for preverbal and 61% correct for postverbal. These values are not significantly different from each other ($Z_1=1.31$, $p=0.19$).

Table 1. Percentage correct by order (preverbal vs. postverbal)

| | Percentage correct | p-value |
|-------------------|--------------------|---------|
| <i>Preverbal</i> | 67 | 0.19 |
| <i>Postverbal</i> | 61 | |

Secondly, in table 2 I analyzed the performance on the four different types of verb (*gustar*, *encantar*, *faltar*, *dar asco*). We can clearly see that while the children perform above chance in

³ Cuervo (2010) classifies *faltar* as an existential unaccusative instead of a psych-unaccusative. For the purpose of this paper we will ignore this distinction.

gustar and *encantar* (78% correct in both cases), they perform at chance in *faltar* and *dar asco* (52% and 49% respectively). This is a relevant fact because it indicates that the findings of the Gómez Soler's (2011) production study (i.e. children had no problem using *gustar*) were not the result of lexical knowledge of that specific verb. Rather, it implies that children possess true knowledge of the unaccusative construction because the children are able to extend this knowledge to *encantar*. However, it is clear that children do not have equal facility with all psych-verbs tested. In particular, they performed at chance levels on items with *faltar* and *dar asco*.

Table 2. Percentage correct by verb

| | Percentage correct |
|-----------------|--------------------|
| <i>Gustar</i> | 78 |
| <i>Encantar</i> | 78 |
| <i>Faltar</i> | 52 |
| <i>Dar asco</i> | 49 |

In the third place, I looked at these two variables (order and type of verb) together and analyzed the subjects' performance. We can see this in table 3. For *gustar*, the means are 79% correct for sentences with postverbal order and 78% correct for sentences with preverbal order. These two values are not statistically different from each other ($Z_1=-0.17$, $p=0.86$). This means that children show the same performance in sentences that lack A-movement and sentences that have A-movement. *Encantar* patterns with *gustar*, the means are 80% correct for postverbal order and 76% correct for preverbal order. Again, these values are not statistically different from each other ($Z_1=-0.49$, $p=0.62$). The means for *faltar* are 50% for postverbal order and 54% for preverbal order. These values are again not significantly different from each other ($Z_1=0.39$, $p=0.70$). For *dar asco* we find 35% correct for postverbal order and 63% correct for preverbal order. These means are significantly different from each other ($Z_1=2.29$, $p=0.0223$). However, we need to take into account the fact that, since the children's answers for *faltar* and *dar asco* are not significantly different from chance, the patterning of postverbal with respect to preverbal order may not be relevant for the study.

Table 3. Percentage correct verb & order

| | Preverbal | Postverbal | p-value |
|-----------------|-----------|------------|---------|
| <i>Gustar</i> | 78 | 79 | 0.86 |
| <i>Encantar</i> | 76 | 80 | 0.62 |
| <i>Faltar</i> | 54 | 50 | 0.70 |
| <i>Dar asco</i> | 63 | 35 | 0.0223 |

Fourthly, I compared the children's results on the fillers to their results on the test items including *gustar* and *encantar*. We excluded *faltar* and *dar asco* since children performed at chance on those items. The difference between the performance on fillers and test items turned out not to be significant. The participants seemed to perform equally well with the fillers (77% correct) than with the test sentences (78% correct) We will explore this issue in more depth in section 4.3.5.

Table 4. Fillers vs. Test sentences

| | Percentage correct | p-value |
|---|--------------------|---------|
| <i>Fillers</i> | 77 | 0.86 |
| <i>Test sentences</i> (<i>gustar+encantar</i>) | 78 | |

Finally, I tested the difference in performance with regards to the subjects' ages. The difference between the means overall (58% correct for 3-year olds and 69% correct for 4-year-olds) is not significant ($Z_1=-1.76$, $p=0.078$) although it approaches significance.

Table 5. 3-year-olds vs. 4-year-olds

| | Percentage correct | p-value |
|--------------------|--------------------|---------|
| <i>3-year-olds</i> | 58 | 0.078 |
| <i>4-year-olds</i> | 69 | |

To sum up, children perform equally well on sentences with A-movement and sentences without A-movement. With regards to the verbs, they perform above chance with *gustar* and *encantar* and at chance with *faltar* and *dar asco*. Argument order is again not a significant factor when we look at the individual verbs *gustar* and *encantar* (*faltar* and *dar asco* are not relevant at this point because the subjects were at chance with these two verbs). The participants performed equally well on fillers and test items. Finally, 4-year-olds performed better than 3-year-olds but not significantly better.

4.3.5 Discussion

This experiment, as Gómez Soler's (2011) production study, provides independent evidence against the ACDH and the EARH. Since children were able to understand sentences involving A-movement, contrary to the predictions of the ACDH, they must be able to form A-chains. On the other hand, contrary to the predictions of the EARH, children understood sentences without an external argument. This entails that children are able to handle the absence of the external argument⁴.

However, the fact that children performed at chance on *faltar* and *dar asco* needed to be explained. In order to find an explanation for this fact I analyzed the mothers' utterances. This could allow us to see if it was a matter of absence in the input and establish certain correlations between the children's input and their output. The results of this search are worth discussing in detail.

Table 6. Frequency of *gustar*, *faltar*, *dar asco* and *encantar* in the mothers' sentences

| | <i>Gustar</i> | <i>Faltar</i> | <i>Dar Asco</i> | <i>Encantar</i> |
|---------|---------------|---------------|-----------------|-----------------|
| Aguirre | 59 | 3 | 0 | 2 |
| Irene | 95 | 10 | 0 | 9 |
| Montes | 14 | 6 | 0 | 0 |
| Linaza | 0 | 0 | 0 | 0 |

⁴ A reviewer suggested that animacy could have been a cue for the children. Thus, this variable should be controlled if this study is to be replicated.

| | | | | |
|--------------|------------|-----------|----------|-----------|
| Ornat | 49 | 6 | 0 | 2 |
| TOTAL | 217 | 19 | 0 | 13 |

In Table 6 we can see the number of times that *gustar*, *faltar*, *dar asco* and *encantar* appear in the mothers' sentences. The tokens of *faltar* and *dar asco* are extremely low if we compare them with the *gustar* tokens (217). In fact, there is not a single example of *dar asco* in the children's input. This fact, in theory, would give us an explanation for why children perform at chance in these two tests items related to frequency effects. However, interestingly, if we look at *encantar*, we can easily realize that the acquisition process does not hinge solely on input. Children performed above chance on *encantar* (78%), however, there are only 13 occurrences of this verb in the mothers' input (as compared to 217 occurrences of *gustar*!). So, this allows us to claim that the children are not merely mimicking what they hear but, on the other hand, have the unaccusative structure of class III psych-verbs encoded in their developing grammar.

Next, I would like to present some ad-hoc explanations for children's poor performance on *faltar* and *dar asco*. *Dar asco* might be difficult to learn because it is a complex verb and this is not standard for psych-predicates. *Faltar*, as I pointed out in 4.2.3, is not a psych-verb predicate but an existential predicate. This verb can appear with or without a clitic (the latter option is not possible for psych-predicates). We can see an example of this in (7) and (8):

(7) *Faltan 30 minutos para llegar*
It's 30 minutes until we get there

(8) *Nos faltan 30 minutos para llegar*
It's 30 minutes until we get there

So (7) lacks the clitic and (8) does not; however, both are grammatical. This is not possible with psych-predicates since the clitic always has to be present. Also, the expression "hace falta" (*it's necessary*), is quite common in Spanish. So, maybe the fact that *faltar* can appear in different configurations (with and without the clitic and in the expression "hace falta") makes the acquisition process not as straightforward as for psych-verbs.

On the other hand, *encantar* follows the regular pattern of psych-verbs and does not present any of these added factors of difficulty. This accounts for the fact that it is easily acquired. In conclusion, it seems that children's poor performance with *faltar* and *dar asco* might not be caused by an inability to deal with unaccusativity but by the fact that these verbs present some additionally complicating factors.

Finally, I would like to discuss the implications of the fact that children performed equally well on control sentences and psych-verb constructions. There are two main differences between psych-verb and control predicates. First of all, whereas the former can involve movement, the latter cannot. We have already seen that movement is not a challenge for L1 learners of Spanish since children perform equally well on sentences with and without A-movement. And, not surprisingly, they also performed above chance on control sentences. The second difference between these predicates shades light on a more interesting issue. Psych-predicates have a quirky subject and have a non-canonical alignment of theta-roles to syntactic positions as we discussed in section 2. On the other hand, control predicates have a nominative subject and a canonical alignment of theta-roles. So, according to the Markedness Hypothesis (section 3.2), psych-

predicates would be acquired later because they are marked constructions. However, the findings of this study indicate that children acquire the marked and the unmarked predicates at roughly the same time.

In the last section, I will present the theoretical rationale that logically follows from the findings of this investigation.

5. General Discussion

My studies demonstrate that children learning Spanish as their first language are able to both produce (Gómez Soler, 2011) and understand class III psych-verb constructions from an early age. Gómez Soler (2011) presented evidence from CHILDES supporting the idea that children learning Spanish manifest a very early knowledge of the verb *gustar*. Since *gustar* is an unaccusative verb, we can claim that these children do not exhibit any problems with the lack of an external argument or the formation of A-chains. This claim was also supported by the findings of the comprehension experiment presented in this article: children are able to understand sentences with and without A-movement with relative ease. This contradicts Borer and Wexler's (1987) Maturation Hypothesis. More specifically, it contradicts both versions of the Maturation Hypothesis: the A-Chain Deficit Hypothesis and the External Argument Requirement Hypothesis.

Borer and Wexler (1987) showed that children's apparent use of A-chains in verbal passives was due to the fact that children gave verbal passives an adjectival analysis. Babyonyshev et al. (2001) presented a similar kind of evidence for Russian unaccusatives. Children analyzed unaccusative verbs as unergative verbs. Both adjectival passives and unergative verbs lack movement. Thus, Borer and Wexler (1987) on the one hand and Babyonyshev et al. (2001) on the other, demonstrated that children were unable to use A-chains and that their apparent correct use of them took place when children were using an s-homophone (syntactic homophone). Gómez Soler (2011) states with certainty that children are not using an s-homophone because the Experiencer has dative case in all of the children's utterances. If they were using an unergative structure, the subject would be nominative. Thus I believe that they are really applying an unaccusative analysis to the *gustar* sentences and, by extension, to the sentences that include other psych-verbs. With regard to the comprehension experiment, children correctly comprehend psych-verb constructions regardless of whether it contains A-movement or not, for the psych verbs in the children's lexicon.

Also, we can claim that children's grammar is guided by the Thematic Hierarchy and UTAH from an early age, since they assign a prominent place in the structure to the NP carrying the Experiencer θ -role and demote the Theme at D-structure. This refutes Babyonyshev al.'s claim that UTAH seems to be violated in children's structures with unaccusative verbs.

I believe this early knowledge of psych-verbs belonging to class III to be evidence of the fact that the unaccusative structure of these verbs (*piacere-gustar*) is encoded in UG and L1 learners are able to use this structure as soon as the lexical items are available to them. This supports the Lexical Learning Hypothesis (Wexler and Chien 1985), which states that innate principles become effective as soon as lexical learning has occurred. As we saw in the comprehension experiment, the lexical items *faltar* and *dar asco* had not been acquired at that point. However, for the items that have been acquired, the mechanism to produce and comprehend an unaccusative structure was already in place.

Further evidence for the view that the unaccusative nature of Spanish psych-verbs of class III and the mechanisms to deal with A-chains are part of the child's innate biological program comes from the data collected from the mothers' sentences. With regard to *encantar*, we saw that children were able to perform above chance on this item in spite of the fact that its occurrence in the mothers' sentences was almost inexistent. Thus, the unaccusative structure of psych-verbs has to be encoded in the child's UG.

We can support the argument for the innateness of the unaccusativity of class III psych-verbs with crosslinguistic evidence. Landau (2010) claimed that psych-verbs exhibit *psych-effects*, that is, special syntactic properties associated with Experiencers. In particular, for verbs from class III, these psych-effects come from their unaccusative nature.⁵ Landau states that this is true for almost every language where psych-verbs have been studied and supports this claim with data from languages as disparate as Greek, Hebrew, English, Faroese and Spanish.

In particular, Landau (2010: 84) proposed a parameter that is related to psych-verbs and how they are acquired: the Quirky Subject Parameter (QSP). He defines the concept of quirky subject as follows: "a quirky subject is just an argument that displays more canonical subject properties (except for agreement), but bears inherent case" (Landau 2010: 81). Quirky subjects are those that are inserted in unaccusative structures, so the subject of Spanish class III psych-verbs is considered to be a quirky subject. Secondly, human languages are parameterized with respect to quirky subjects by means of the Quirky Subject Parameter. According to the QSP, there are three possible parameters and thus three types of languages: Some languages like Icelandic, Faroese and Greek allow dative, accusative and genitive Experiencers to function as a quirky subject. Other languages such as Italian, Spanish and Dutch only allow dative Experiencers to occur as subjects. Finally, languages like English, French and Hebrew do not allow any kind of quirky subject.

I believe my data showed that the Quirky Subject Parameter is set very early at least for Spanish children. This fact provides support for Wexler's (1996) Very Early Parameter Setting (VEPS): "Basic parameters are set correctly at the earliest observable stages, that is, at least from the time that the child enters the two-word stage around 18 months of age."

If we assume that Spanish children have set the Quirky Subject Parameter very early in their acquisition process, they will know that the subject of class III psych verbs is a quirky subject. If the subject of these verbs is a quirky subject, it has to be part of an unaccusative configuration. As we have seen in section 4, Spanish children possess knowledge of these facts very early in their acquisition process. The findings analyzed in this project also corroborate the Continuity Hypothesis (Pinker 1984: 6): "the null hypothesis in developmental psychology is that the cognitive mechanisms of children and adults are identical."

6. Conclusion

This study showed that children learning Spanish are able to comprehend psych-verbs belonging to class III from an early age. This supports Gómez Soler's (2011) production findings on *gustar*. Since these verbs are unaccusatives, they involve movement of the Experiencer or the

⁵ Landau makes a more general claim with respect to the reason for *psych effects* in psych verbs. According to him, experiencers are mental locations, that is, locatives, and this explains the special syntactic properties exhibited by psych-verbs. He rejects the idea that psych-verbs belonging to class II are unaccusatives. On the other hand, he agrees with the idea that class III verbs are unaccusatives and provides evidence from different languages (Spanish, Icelandic or Greek among others) (Landau 2010, p. 7-8).

Theme from the object to the subject position (a non-trivial A-chain) and/or lack an external argument. Thus, the results refute both versions of the Maturation Hypothesis: the A-Chain Deficit Hypothesis and the External Argument Requirement Hypothesis, which claim that the mechanism necessary to produce and comprehend structures that involve A-chains and/or lack an external argument are subject to maturation. Notice that this study does not provide evidence against the gist of the Maturation Hypothesis, namely that some principles mature later in life. However, it provides evidence against the maturation of A-chains and the ability to handle the absence of an external argument. My conclusion from the data presented in this paper is that children's ability to use unaccusative structures with psych-verbs comes from UG and is not subject to maturation but is immediately available to the child.

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