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The acquisition of tense-aspect morphology

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Reflexive and middle markers in early child language acquisition: evidence from Mexican Spanish*

DONNA JACKSON-MALDONADO, *Universidad Autónoma de Querétaro*
RICARDO MALDONADO, *Universidad Nacional Autónoma de México and Universidad Autónoma de Querétaro*
DONNA J. THAL, *San Diego State University and University of California, San Diego*

ABSTRACT

Use of the clitic *se* was analysed in 28- and 36-month-old Spanish-speaking toddlers using a Cognitive Grammar model (Langacker 1987, 1992, Maldonado 1992). The data demonstrate that the first forms of the clitic *se* focus on the critical moment of change (middle forms) rather than true reflexives. This aspectual phenomenon is based on cognition. We argue, therefore, that the earliest uses of *se* by Spanish-speaking children occur because of the cognitive salience of the action described by the verb. These results provide strong support for cognitive models of language acquisition and evidence against the claim that all non-reflexive uses of *se* are either derived from a subject deletion rule or simple exceptional uses that should be listed in the lexicon.

INTRODUCTION

Although a large proportion of the world population is Spanish speaking, little research has focused on the acquisition of Spanish as a first language. Of the existing studies, few are well known in the larger academic community because they are published in journals with limited international circulation or in doctoral dissertations. In addition, most of the literature is limited because it is based on an Hispanic tradition in which descriptive structural grammars are used to analyse

* This work was supported in part by the following: NIH grants DC00089 and DC00482, and a grant from the John D. and Catherine T. MacArthur Foundation. Address for correspondence: Dr Donna Jackson-Maldonado, 2da de Cedros 676, Jurica, Querétaro 76110, Mexico. E-mail: djackson@sunserver.uaq.mx

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language samples. This results in a description of sentence types, subjects, verbs and objects and, on a finer level, word classes and grammatical categories which are then assigned specific ages at which they are expected to be present in children's utterances[1] (for an extensive review of the literature, see Clark 1985, López Ornat 1988, Merino 1992).

New theoretical models that emphasize cognitive explanations of the acquisition of language now provide the means for developing better studies of Spanish language acquisition. Observational techniques have also been modified to provide better opportunities for observing children's language abilities. In this study we will use a Cognitive Grammar model (Langacker 1987, 1992, Maldonado 1992) to analyse the uses of *se*, a language specific clitic, by toddlers acquiring Spanish as their first language.

Our discussion of the acquisition of the *se* marker will begin with a Cognitive Grammar analysis of coreferential clitics. Typically, formal and traditional grammars have considered all occurrences of *se* to be either a type of reflexive, derived from reflexive, or a memorized lexical form. We will show that a cognitive model allows differentiation of reflexives from middles,[2] and we will argue that middles are based on semantic representations that are particularly salient and, as a result, most likely to appear at earlier ages than the true reflexive form. Next, we will review existing studies of the acquisition of Spanish clitics. We will argue that the models used in these studies are inadequate and that cognitive models are needed for an accurate explanation of clitic acquisition. Finally, we will present a study of acquisition of the clitic *se* in 28- and 36-month-old children using naturalistic language samples as the source of the data. The analysis will show that the *se* marker imposes a restriction on conceptualization of the event such that the pivotal moment of change is consistently in focus. This in turn determines that the *se* marker functions as an aspectual marker of inceptivity, inchoativity, abruptness and even pragmatic factors related to accidentality and unexpectedness. We will use the analysis to demonstrate that a cognitive strategy of focusing on change is a better explanation of the earlier uses of *se* in young children than the subject

[1] Most of the time obligatory contexts, frequency of occurrence, incorrect use, absence in obligatory contexts, etc. are not included in the analyses.

[2] Reflexives correspond to cases where subject and object can be clearly distinguished (Kemmer, 1992), while middles have a low degree of subject/object differentiation. Thus, the form *se* is reflexive in *Virginia se vio en el espejo* (Virginia saw herself in the mirror) and middle in *Virginia se despertó* (Virginia woke up).

TABLE 1. *Spanish clitic forms and their functions*

Person	Direct object		Indirect object		Coreferential	
1st	*me*	*nos* (pl.)	*me*	*nos* (pl.)	*me*	*nos* (pl.)
2nd	*te*	*les* (pl.)	*te*	*les* (pl.)	*te*	*les* (pl.)
3rd	*lo/la*	*los/las* (pl.)	*le*	*les* (pl)	*se*	*se* (pl.)
			se before *lo/la*			

deletion rule or the exceptional nature of the non-reflexive uses of *se* as proposed by generative grammars and other formal approaches.

A cognitive grammar model of se

The acquisition of clitics is interesting because they are morphological forms that serve a wide variety of functions in Spanish grammar. Clitics are pronouns that can be either bound or independent. In Spanish there is considerable overlap between direct, indirect, and coreferential first and second person clitics (as shown in Table 1).

Ambiguities resulting from this overlap are clarified in context through syntactic determinacies. Coreferential clitics are easily separated from object clitics because they are linked to the subject. Object clitics are differentiated from each other because indirect object clitics, with the exception of a small class that appear with verbs of communication, co-occur with a noun phrase or a clitic direct object.

Clitics have multiple functions in Spanish. Not only do they mark direct and indirect objects, e.g., *Adrián se lo dio* (Adrian gave it to him/her), but they can signal two types of coreference: reflexivity and reciprocality, e.g., *Valeria se vio en el espejo* (Valeria saw herself in the mirror), *Adrián y Valeria se adoran* (Adrian and Valeria adore each other), or a wide range of middle functions specialized to emphasize or focus on a specific part of an event. These may include increased affectedness of experiencer subject, e.g., *Se alegró con un tequila* (He got happy drinking a tequila), self-emphatic subject benefaction, e.g., *Se consiguió un trabajo excelente* (S/he got her/himself an excellent job), maximal exploitation of the object, e.g., *Se leyó el periódico* (S/he read the (whole) newspaper), increased subject involvement in an event, e.g., *Se bailó una rumba* (S/he danced away a rumba), routinary actions, e.g., *Se bañó temprano* (He bathed early), abruptness, e.g., *Se*

apareció un murciélago (A bat showed up), dynamic and energetic actions, e.g., *Se subió a la mesa* (He hopped on the table), and accidentality, e.g., *Se cayó el vaso* (The glass fell down). The clitic *se* can also mark different types of passive, e.g., *Se resolvieron los problemas* (The problems were solved), and impersonal constructions, e.g., *Se estudia el problema con todo cuidado* (One studies/must study the problem carefully). As a multifunctional form that is present in many Romance languages, but absent to a large extent in English (the language in which most studies of language acquisition have been conducted), the *se* form is of interest for understanding more universal aspects of language acquisition. Of fundamental importance is to know what functions of the clitic *se* are first acquired in early language and if those uses correspond to basic schemas that are applied in a variety of situations.

One way to examine the cognitive significance of the clitic *se* is to use a classification that takes into consideration the argument structure of the verb and the types of change induced by it. In our view, a first step in the description of the clitic se, from a conceptual framework, is the distinction between transitive and coreferential phenomena. The transitive *se* will be excluded from this discussion, because we believe that it is not a true representation of the clitic *se*.[3] The coreferential uses of *se* involve a further distinction between reflexive and middle values (Kemmer 1992, Maldonado 1992). Reflexives presuppose a split representation of the self where subject and object are clearly differentiated, although they signal the same referent, for example, *Yo me vi en el espejo* (I saw myself in the mirror). Middles involve a whole array of meanings that need not derive from the reflexive construction since the self cannot be split represented, for example, *Yo me siento triste* (I feel sad). The middle construction involves a low degree of separability between the coreferred elements, making it difficult to distinguish between the agent and the patient (Kemmer 1992).

The degree of differentiation between participants determines the degree of elaboration of the event. In a transitive clause there is a higher degree of elaboration than with the use of the clitic *se*, as there is a profile of how the subject acts in order to impose a change in the object. The use of the clitic *se* reduces this high degree of elaboration

[3] Many studies that address clitics confuse the transitive *se* with other *se* forms. The transitive use is phonologically determined and corresponds to the indirect object clitic *le* which dissimilates to *se* before *lo*, e.g., *Yo se lo di* (I gave it to him).

in a variety of ways. With the coreferential reflexive *se*, there is less subject/object differentiation and thus less elaboration, as we do not interact with ourselves in the way we interact with others (Tuggy 1981). In a similar manner, middle constructions have a lesser degree of elaboration than reflexives. In a reflexive like *Se controló a sí mismo con mucho esfuerzo* (He controlled himself with great efforts) the internal interaction with the self to calm down involves a process that is always longer and more elaborated than the spontaneous middle event exemplifed by *Se calmó* (**a sí mismo*) *de pronto* (He calmed down [suddenly]). The latter example, a middle construction, has a lesser degree of elaboration because the participants are less differentiated. The event is reduced to the crucial moment in which the change of state takes place, and thus there is less elaboration. Typically, middle constructions involve a change of state of one participant without the elaboration of the inductive forces that drive the event, i.e., an event with low degree of elaboration tends to designate routine actions, changes of emotion, location or sudden changes of state, without providing information about the initiative forces that induced it. The gradual organization of this phenomenon should be evident from the following examples. While (I) below, is an example of a reflexive construction, the examples in (II) are all middles. They are presented in decreasing order of elaboration.

(I) Reflexive

(1) *Me imaginé bailando con Tongolele.*
RFL imagine-PST dancing with Tongolele
I imagined myself dancing with Tongolele.

(II) Middles

(2) *Todas las mañanas me peino.* (routine event)
Every DET morning MDDL-1ST comb
Every morning I comb (my hair).

(3) *Me enojo con el ruido.* (emotional change)
MDDL madden with DET noise
The noise makes me mad. [literally: I get mad with the noise.]

(4) *Me dormí a las ocho.* (sudden event)
MDDL sleep-PST PREP DET eight
I went to sleep at eight.

(5) *Valeria se cayó de la silla.* (unplanned occurrence)
Valeria MDL fall-PST down from the chair
Valeria fell off the chair.

In the reflexive (I), the subject/object distinction is abstract: the coreferential object is in a mental space (Fauconnier 1985) which is different from the space of the speaker's reality. In contrast, such distinction is harder to establish as we go down the examples in (II), the middle constructions. Routine actions involve a very low degree of volitional control (Kemmer 1992) – washing and combing our hair (routinely) imply no special attention to what is being done. Emotional reactions imply the subject's participation but exclude mental control; physical changes, such as waking up or falling asleep, happen spontaneously and do not require the subject's participation or awareness. Finally, unplanned occurrences pop up spontaneously. There is no subject awareness and the event comes as a surprise, since there is no information regarding the initiative forces that cause that event to happen.

Because not all uses of *se* are reflexive, one question to be resolved is the order of acquisition. Do children acquire reflexives before other forms of *se* or vice versa? Differentiating between true reflexives and middle forms is thus crucial to the proper understanding of the development of the *se* form in children who are learning Spanish as a first language. Blurring this basic distinction may prevent the proper understanding of the problem. For example, the long-held tradition of calling examples like *caerse* (to fall down) reflexives when they are middle-marked root intransitive verbs has certainly been misleading. As can be expected, they have been treated as exceptional or deviant cases, since there is no way of connecting them with the function of the reflexive marker. Analysed as a middle construction, the use of *se* in such examples is well motivated. Notice that *caerse* is of lower elaboration than the non-*se* form. While *caer* (fall) profiles a motional path from a locational source to an end point, *caerse* (fall down) designates a specific moment of change of location that tends to be read as an abrupt and unexpected event. It should come as no surprise that focusing on the pivotal moment of change also allows elimination of subject responsibility. An utterance like *Yo no lo tiré, se cayó solito* (I did not drop it, it just fell down) may be one of the most common expressions used by Hispanic children (the form is also widely used by Spanish-speaking politicians). Responsibility avoidance is a well known use of *se* of adult language that has also been reported for early Spanish in the work of López-Ornat (1994). This phenomenon is naturally accounted for by the focusing function of *se*.

Middle marking systems have two basic characteristics because the possibility of distinguishing two separate images of the same participant is either low or null in middle constructions: (1) the initiator

of the action cannot be distinguished from the undergoer who happens to be most prominent, and (2) the degree of elaboration of the event is low, as it is reduced to the crucial moment in which the change of state takes place. The most common verb types used for middle constructions across languages are those which refer to grooming, e.g., *lavarse* (wash), *peinarse* (comb); changes of body posture, e.g., *sentarse* (sit), *pararse* (stand); changes of location, e.g., *irse* (leave), *bajarse* (get down); changes of emotional state, e.g., *alegrarse* (gladden), *sorprenderse* (be surprised); and unplanned occurrences, e.g., *caerse* (fall down), *morirse* (die).

The fundamental functions of the middle form, to produce an event with low degree of elaboration and focus on the pivotal moment of change, are demonstrated in a variety of middle constructions. The two most common patterns, exemplified below, involve a derivation process from transitive verbs. In Example 6, the middle form (6b) is derived from the transitive sentence (6a) by what appears to be a subject deletion. *Se* marks the presence of a non-identified force that induces the change of state undergone by the subject. Examples like (6b) are traditionally called 'passives' or 'passive reflexives':[4]

(6) a. *Juan rompió la taza.*
Juan broke the cup.

b. *La taza se rompió.*
The cup broke.

In Example 7 the human subject is present in the middle form (7b), but in a schematic manner: that is, it is a non-identified institution or human being that bans some action. The construction is thus an impersonal one.[5]

(7) a. *El gobierno prohibe fumar.*
The government bans smoking.

b. *Se prohibe fumar.*
Smoking is forbidden.

Se displays parallel values when it combines with inherently intransitive

[4] In Maldonado (1992) arguments are given to show that the construction is not really a passive one, but a 'terminal prominence middle'. However, to avoid confusion we will use the traditional term here.

[5] Impersonal constructions always involve a human subject with a variety of arbitrary representations: anybody, somebody, one. For a detailed analysis of the meanings of impersonal *se*, see Maldonado (1992, and in press).

verb stems. In the case of verbs of translational motion, such as *salir* (to leave), there is one participant going through a path. The agency of the subject is not particularly important in these cases since the actor is also the undergoer. Yet the path to be followed is central. The simplification imposed by *se* operates at this level. It selects the actual moment of change of location as the most important part of the predication and downplays other parts of the trajectory. The path of *ir* is thus a long one, while that of *irse* is restricted to the location left by the subject. The following examples demonstrate this contrast. As an answer to 'Where is Juan?', the end of the path must be specified when *ir* 'go' is used whereas it is not when *irse* 'leave' is used:

(8) a. *No está, fue a la casa.*
He is not here, he went home.

b. **No está fue.*
He is not here, he went.

c. *No está, se fue.*
He is not here, he left.

While focusing on the change of state, the event becomes dynamic. In contrast with the full path of the intransitive verb *ir*, the *se* construction designates a sudden, abrupt and rapid change. A more obvious example of this phenomenon follows. In (9a) the time frame for the activity is hours or days while in (9b) it is only seconds.

(9) a. *El atleta subió la montaña.*
The athlete went up the mountain.

b. *El atleta se subió a la mesa.*
The athlete got on the table.

Se is also used to mark an unexpected event. From a diachronic viewpoint (Maldonado 1989) it has been shown that counter-to-expectation events develop from the suddenness or abruptness of focalized constructions. The lack of information about the energy driving the event together with the focus on the actual change of state makes a given action run against normal expectations. This can be clearly observed from the contrast in (10):

(10) a. *Juan cayó al agua con elegancia.*
Juan fell into the water elegantly.

b. *Juan se cayó al agua vestido.*
Juan fell into the water with his clothes on.

In (10a) the act of falling through a path is controlled by the subject

while in (10b) the path is reduced to the crucial point of change, there is no agentive control and the falling down is thus accidental.

With the exception of grooming activities, *lavarse* (wash), *bañarse* (bathe), all middle constructions involve focusing on the actual change of state. We therefore suggest that grooming verbs constitute an intermediate category between reflexives and middles in which some degree of distinguishability is still attainable.

Based on these distinctions, we divide the functions of *se* into three general groups according to their transitive, reflexive or middle behaviour (see Table 2).[6] In this paper we will consider only the reflexive and middle forms (the coreferential uses) of *se*. We will not consider the indirect object, such as *se lo di* (I gave it to him), or the lexicalized forms, such as *llamarse*, because they raise different and separate issues. For example, the lexicalized forms do not have an intransitive form with the same meaning (*Llamo a mi mama* (I call my mother) vs. *¿Cómo se llama?* (What is his/her name) but not **Ella llama* (She calls)). As a result, they can only be learned as non-analysable units.[7]

The model we propose does not focus only on verb argument structure. It also allows us to examine the ways in which the development of an event can be scanned by human perception. Humans have the flexibility of tracking an event from the input of an agent to the change of state undergone by the patient or they may simply focus on the most informative part of the event. This basic difference is commonly coded by aspectual markers or by other means such as the English verb particles 'down', 'up', etc. ('He fell' vs. 'He fell down'), or by clitics in Romance languages (Talmy 1985). We argue that the *se* marker is not derived only by deleting the subject of the clause, as claimed by generative and other formal analyses, but it may also arise as a function of the need to focus on the nucleus of the event rather than the subject. The tendency for languages to give special prominence to the terminal part of the event (the action or the object receiving the action) has been pointed out from a variety of frameworks (DeLancey 1981, Givon 1984, Langacker 1987, among others). We claim that the focus on the crucial point, where the change of state

[6] As we have mentioned before, a common tendency in the Hispanic literature is to use a two-way distinction: pronominal objects or reflexive forms.

[7] In Maldonado (1992), lexicalized forms are subject to a fine-grained analysis in which the *se* marked verb becomes energetic. It is highly probable that at this stage those forms are learned by rote.

TABLE 2. *Functions of Spanish* se

Transitive	Reflexive	Middle
Indirect object: *Yo se lo di.* I gave it to him.	Accusative reflexive: *Valeria se vio en la foto.* Valeria saw herself in the picture.	Grooming: *Se va a peinar con esto.* S/he is going to comb (her/his hair) with this.
	Dative reflexive: *Se puso el sombrero.* S/he put on his/her hat.	Change of state: (a) Physical *Se cansó.* S/he got tired.
	Reciprocal: *(Los leones) se pelearon.* (The lions) had a fight.	*Se durmió el bebito.* The baby fell asleep.
		(b) Emotional *Se asustó, ¡huy!* S/he got scared, oh!
		Motion change: (a) Change of position *Pos acá se sentó en un árbol.* Well, he sat here on a tree.
		(b) Change of location *Quiero irme ya.* I want to leave now.
	Lexicalized forms: *¿Cómo te llamas?* What is your name?	Unexpected change: (a) From intransitive verbs *Se cayó.* He fell down.
		(b) From transitive verbs *Se rompió.* It broke.
		Impersonals: *Se pone aquí.* One must put it there
		Uncontrolled actions: *Se pegó así, ¡ey!* He hit himself like this, yeah!

takes place that is served by the middle forms of *se,* is a clear example of the terminal prominence phenomenon.

The classification presented in Table 2 establishes a clear distinction between reflexive and middle values. The reflexive class includes accusative and dative reflexives, reciprocals, and lexicalized forms whose historical source was a reflexive construction. The middle category is more complex. It includes the class of grooming actions that appear to fit somewhere between reflexives and middles, as well as the two major groups described above: the change of state class and the unexpected change class. The change of state class refers to changes of physical or emotional condition and changes of motion, including those of position and location. The unexpected change class is divided in two subgroups since the forms may come from either transitive or intransitive verbs. There are two more categories that correspond to situations in which the representation of the agent is diminished in different ways: uncontrolled actions involve an agent unable to use his controlling properties, while impersonals involve a construal in which the responsibility of the action is diluted in a generic subject whose identity cannot be established. Except for grooming and impersonal constructions all middles involve focusing on a crucial point in which a change of state takes place.

Generative grammarians (Aid 1973, Aissen 1987, Babby & Brecht 1975, Campos 1989, Fagan 1988, Goldin 1968, Grimshaw 1982, Sells, Zaenen & Zec 1986) have analysed all instances of change of state constructions as derived by an agent deletion rule. In that view, unexpectedness must be seen as a secondary effect of the same deletion process. While that type of analysis may account for the clitic *se* when it is applied to transitive verbs, it leaves the occurrence of *se* with intransitive roots unexplained. In the generative tradition these are generally categorized as lexicalized or exceptions. In our opinion, that problem can be resolved by focusing on how unexpectedness is triggered. Is it done only by deletion of the agent or is it the more basic procedure of focusing on the pivotal change of state? An analysis of adult language (Maldonado 1992) reported results that support claims for the second approach. In this paper we will observe whether similar contrasts are present, and if the more basic analysis is used with higher frequency, in the developmental period during which *se* is acquired by Spanish-speaking children.

Studies of Spanish language acquisition

The Hispanic tradition Most studies of children learning Spanish are case studies of children observed in their homes. They report the age at

which certain linguistic forms were used consistently in spontaneous language (Gili Gaya 1972, Hernández-Pina 1984, Montes Giraldo 1974, Peronard 1987, and for further reference, see Clark 1985). Other research (Aguado Alonso 1989, Brisk 1976, Kernan & Blount 1966, Pérez-Pereira 1991, Soler 1984) has also begun using experimental measures. Language samples and utterances obtained by experimental measures are examined for examples of specific sentence structures, word classes, morphology and grammatical categories, and the earliest age at which an example appears is considered to be the age of acquisition. The absence of structures in obligatory contexts (particularly in language samples) and instances in which the form is incorrectly marked (perhaps with a simpler form or an overgeneralization), or inconsistently marked are seldom analysed. Although these studies provide a rich and informative source of information about the early appearance of language forms in specific individuals, most cannot answer questions about general tendencies or normal variation, questions that need to be answered to understand the process of language acquisition.

Clitics in Spanish language acquisition Clitics are described mostly in a tangential fashion in studies of Spanish language acquisition. Most of those studies focus on the appearance of pronouns in the context of different types of verbs (Gallo Valdivieso 1994*a*, Gonzalez 1975, Hernández-Pina 1984, Maez 1983). Sometimes, reference is made to pronominal reflexives in which case occurrences of clitics as direct objects are considered (Gallo Valdivieso 1994*b*, Gonzalez 1975, 1980, 1983, Hernández-Pina 1984, Montes Giraldo 1974). There is a basic problem in most of these studies: they have classified all clitics as reflexives,[8] although most of them are really object clitics, inchoatives, impersonals, datives or emphatic benefactives. For example, Gallo Valdivieso (1994*b*) and Hernández Pina (1984) classified all of the following utterances (produced by children as young as 1;9) as pronominal reflexives and/or object pronouns: *moto se va* (motor-cycle leaves), *no se pega* (don't hit), *se ha llevado nena* (took baby), *se cayó* (it fell), *se cae e nene* (the baby falls), *dame* (give me), *sientate* (sit down), *se te acabó* (all gone), *ya se lo di* (I gave it to him) (Gallo Valdivieso 1994*b*, Hernández-Pina 1984). However, the clitic *me/se* in *dame* or *se lo dí* are direct and indirect object clitics of transitive

[8] This is not the case in Gallo Valdivieso (1994*a*, 1994*b*) where forms are viewed only as clitics with no further functional description.

constructions. The *se* in *no se pega* (don't hit) is an impersonal command. The *se* in *moto se va, se cayó, se te acabó, siéntate*, and *se ha llevado nena* are neither reflexives nor objects; they are what we consider middles with inceptive and inchoative meanings. Thus, although these forms appear as early as 1;9, it is not clear what the earliest function of the clitic is, and it is certainly not the case that most are reflexives. These studies tell us that clitics appear at an early age, but not how they are used.

Clitics in Spanish acquisition – a generative perspective

Some researchers have attempted to explain the acquisition of clitics in Spanish by discussing the feasibility of a Parameter Setting analysis (Gallo Valdivieso 1994*a*, 1994*b*) or Government and Binding theory (Hurtado 1984). Although they were tangential to the main topic of her study, Gallo Validivieso showed that clitics appear fairly early in the acquisition of Spanish. Hurtado (1984) did focus directly on clitics. However, his research examined later grammatical structures (in children between the ages of 6 and 11 years).[9] He recognized a variety of functions served by clitics, including demonstrative and personal pronouns, forms related via coreference, e.g., *les di la nota* (I gave them the note), *la niña se peina* (the girl combs herself), datives, e.g., *me es imposible* (it is impossible for me to do it), predicate clitics, e.g., *el delfin es muy amistoso, pero el oso no lo parece* (the dolphin is very friendly, but the bear does not appear to be so), and passive clitics, e.g., *no me fue permitido trabajar* (I was not permitted to work). Yet, his study has analytic problems similar to those mentioned previously. Specifically, he considers both *Margarita se peina* (Margarita combs herself) and *Margarita se rompió el brazo* (Margarita broke her arm) as reflexive forms that are derived from *a sí mismo* (to oneself). That analysis misses an important distinction. The *sí mismo* phrase can only be used in volitionally controlled events. For example, **Margarita se rompió el brazo a sí misma accidentalmente* is ungrammatical; the utterance is correct only without the *sí mismo* phrase. Thus, of all the occurrences of coreferential *se*, only the volitional ones are reflexives that can be linked to a *sí mismo* phrase. The rest fall in the middle category.

A further problem in Hurtado's analysis is his treatment of 'lexical reflexive' clitics such as *caerse* (to fall down), *romperse* (to break), and

[9] Hurtado (1984: 3) states that 'in exceptional circumstances' children 4, 5 and 12 years old were also observed.

perderse (to get lost). Hurtado claims that *se* is a morphological form in these words. He argues that, in these cases, the clitic does not change a function but is, instead, a lexical part of the verb. In these examples *se* does not fit in any of the other categories described by Hurtado and thus, as is the generative tradition, they are placed in the lexicon.[10] In this paper we will describe an alternative analysis that provides what we believe is a more realistic view of the functions of *se*.

Language acquisition from a cognitive perspective

Clark (1985) argues that normal language acquisition will be adequately understood only when the interaction of the cognitive complexity of the concepts encoded by linguistic forms and the linguistic complexity of the elements of the language being learned are understood. For example, the study of verbs of motion could help us understand which perceptual cues are conceptually more accessible and, therefore, more likely to provide explanations of the processes implied in the acquisition of different verb types. Cross-linguistic research is also a useful means for describing internal organizing principles and acquisition processes by examining the relationships between form, function and meaning (Bates & MacWhinney 1989, Slobin 1985). Within this scope, the Competition Model (Bates & MacWhinney 1989) emphasizes probabilistic mappings between forms and meanings. Other cognitive models (Slobin 1985) propose perceptual filters and storing principles to explain how meaning is mapped to form. Cognitive perspectives suggest that there is a relationship between acquisition of specific structures of a language and a number of related factors such as the frequency with which a form appears in a language, the importance of the form or function to the language, the consistency with which it codes a particular meaning, perceptual salience of the form, and other perceptual or cognitive factors. Research on acquisition of Romance languages has begun to provide support for some of these models (Caselli, Leonard, Volterra & Campagnoli 1993, Hernandez, Bates & Avila 1994, Kail & Charvillat 1988, Pizzuto & Caselli 1993. 1994).

Two studies of Spanish, one by López-Ornat (1994) and the other by Sebastián & Slobin (1994) have addressed language acquisition from a different cognitive perspective. López-Ornat (1994) proposed four phases, each of which is a reorganization of the grammatical

[10] Despite the fact that he differentiates lexical reflexives from *a sì mismo* reflexives, he treats the example of *romperse* in both categories.

information from the previous phase. She described the relations involved in solving grammatical problems in each phase using a variety of linguistic functions. For example, she proposes that when the verbal tenses are being acquired, children use simple sentences. When they begin to use the subjunctive, however, the possibility of producing subordinate clauses becomes available to them because of the reorganization of linguistic representations that were acquired earlier. In other words, children reorganize the information they know from simpler forms (López-Ornat 1994). The second and third person clitics are two of the new morphosyntactic forms that develop with the subjunctive. Although López-Ornat's work does not directly address the acquisition of clitics, it is important in that it attempts to explain grammatical acquisition processes in the light of form-function relationships.

Sebastián & Slobin (1994) specifically addressed the acquisition of clitics. This is one of the first studies to consider aspectual properties of reflexives, particularly the *se* marker. It is also one of the first studies in which the acquisition of the *se* form is examined from a cognitive perspective. Sebastián and Slobin used narratives of 3-, 4- and 9-year-old Spanish, Chilean and Argentinean children to examine two types of reflexives: (1) those that contrast changes of state with descriptions (in non-reflexive forms), and (2) those that mark differences between perfective or completive senses. They showed that children used the clitic *se* with change of state verbs to indicate inception of the state. While 3- and 4-year-olds tended to use imperfective stative forms, e.g., *estaba sentado* (was seated), older children preferred to use *se* for narrative purposes to indicate that an event with a perfective verb was 'over and done'. Thus, they provided examples of the contexts in which *se* is used to explain order of appearance of different forms rather than just documenting age of acquisition.

Although the research described above has provided some preliminary information about the acquisition of clitic forms, that information is either very general (i.e., it does not address clitics specifically) or extremely limited (particularly studies in the Hispanic tradition). Studies that take a cognitive perspective have begun to address important issues related to clitic acquisition but, to date, none has looked directly at the different functions these forms may serve across the developmental period. It is clear from the existing literature that children as young as 1;9 already use the *se* form. What is not clear is the functions of that form and why the form appears in some contexts but not in others. In this paper we will use the cognitive perspective already outlined to provide a clearer picture, and suggest an explanation of the process of acquisition of the Spanish clitic *se*.

METHOD

Subjects

Thirty-seven 28- and 36-month-old children participated in the study. Thirteen of the children (six 28-month-olds and seven 36-month-olds) came from monolingual Spanish-speaking families living in Mexico City and Querétaro, Mexico. Twenty-four (seven 28-month-olds and seventeen 36-month-olds) were from monolingual Spanish-speaking families living in San Diego, California. All participants were part of a larger binational study of language and cognition in Spanish-speaking infants and toddlers.

Although exposure to English was expected to be higher in the San Diego group, attempts were made to limit this as much as possible by selecting children from monolingual families that had no school-aged children. However, even though such families listen to Spanish radio stations and watched Spanish TV programmes, the children were exposed to English to some extent in environments outside the home. There was also a significant difference in socio-economic status and education between the Mexico and San Diego residents. Mexico residents came from middle and upper middle-class families with high school, college, or graduate level education; San Diego residents came mostly from working-class families with grade school or high school education.

Procedure

Three separate 10-minute language samples were obtained in naturalistic contexts with a parent and/or trained research assistants who were native Spanish speakers. Parents were asked to play with their child as they would at home. Both the parent and the research assistants were asked to play naturally with the child, and to follow the child's lead in choosing topics and toys. Participants were allowed to choose from a variety of toys that were placed on the floor. They included a Fisher Price house with furniture and dolls, a Fisher Price farm with animals and a tractor, a pick-up truck, a family, play food, plates and cups, pop-ups, blocks, stacking cups, a purse with a comb and a mirror, tools, rattles, a baby with a bottle and a small crib/basket, puppets and books. Each of the 10-minute language samples included different objects. However, over the course of the entire 30 minutes, all children were exposed to all of the toys. The types of objects presented were particularly important because the topics about which a child talks are directly related to the type of toys with which he/she is playing. Our choice of toys made it highly likely that the participants would talk about grooming, fixing, motion, change of state, and reflexive functions or typical transitives, providing many opportunities to use the clitic *se*.

Language samples were transcribed by trained research assistants using CHAT of the Child Language Analysis System (CLAN) (MacWhinney 1995). Transcriptions were done orthographically and followed standard transcription procedures: they included exactly what the child said and a gloss which interpreted the child's production using adult words. CLAN was used to identify every occurrence of *se* using a number of strategies (searching for *se*, searching for verbs that usually occur with *se*, searching for phonological productions that were similar to *se*). After verbs with *se* were identified, a search was carried out for those verbs appearing without *se* (to identify whether the verb *se* sequence was learned by rote as one unit or whether the clitic functioned independently). Both the exact child production and the adult gloss were used for the analysis. CLAN itself was used to identify strings, but not to analyse the data.

After all occurrences of *se* were identified, they were categorized as reflexives or middles following the semantic (cognitive) classifications described in Table 2. First we identified the categories in which *se* was used most frequently. To do this, the number of tokens in each category was counted and then divided by the total number of tokens to obtain a proportion score. Next we examined the two most frequent categories, motion and unexpected changes, to see whether their use was best explained by the subject deletion rule or the focus on pivotal change. Because of the relatively small number of tokens in the 30-minute language samples the data are presented descriptively. Statistical comparisons will require a much longer language sample or an experimental methodology designed specifically to elicit many examples of *se*.

RESULTS

Initially we analysed the Mexico and San Diego samples separately to determine if there were any differences in the use of *se*. Except for a greater number of tokens used by the San Diego group, which can be attributed to the greater number of subjects (Mexico 13, San Diego 24) there were essentially no differences between the groups.[11] As a result we combined them for all further analyses.

Results are reported as percentage of tokens of *se* that function as

[11] There were two categories in which subjects in only one country produced tokens. Those were dative reflexive (11 tokens in San Diego, 0 in Mexico) and uncontrolled actions (3 tokens in San Diego, 0 in Mexico).

TABLE 3. *Percentage of the tokens of se which functioned as the reflexive, lexical and middle forms*

Category	Number of tokens	Percentage of tokens
Reflexive forms	15	9%
Reflexive *per se*	0	0
Dative reflexive	11	7%
Reciprocal reflexive	4	2%
Lexicalized forms	6	4%
Middle forms	140	87%
Motion	52	32%
Unexpected changes	49	30%
Change of state	16	10%
Impersonal	15	9%
Uncontrolled actions	3	2%
Irregular analogies	2	2%
Grooming	3	2%

reflexives, lexical or middle forms rather than frequency in relation to the total number of utterances for two reasons. First, the questions asked related to the functions of the clitic *se* as it develops and not how often it appears in relation to the total lexicon. Second, there are no data describing the frequency of occurrence of the different functions of *se* in adult Spanish. As a result, an analysis of frequency in relation to lexicon or corpus size would not be interpretable in any meaningful way. We chose, therefore, to report the percentage of each type of clitic *se* in relation to the other types. The number of tokens (the first column in Table 3) thus refers to the total number of utterances in which *se* was used and not the total number of utterances or words in the entire corpus.

The first and most obvious finding is that the children used the clitic *se* for a wide range of semantic categories. However, only 9% served a reflexive function while 87% were middle forms (see Table 3). The two most frequent middle categories were motion (32%) and unexpected change (30%). A few examples, taken from our language samples, illustrate the types of uses observed (see also Table 2):

Reflexives

(11) a. *Un espejo para verte.*
A mirror to see yourself. (reflexive)

b. *Pues se lastiman.* (reciprocal)
Well they hurt each other.

c. *Y éste, cómo se llama?* (lexicalized)
And this one, what is its name?

Middle forms: motion

(12) a. *Se acostó.* (change of position)
He lay down.

b. *Éste se va de paseo.* (change of location)
This one goes for a walk.

Middle forms: unexpected change

(13) a. *Se cayó, se cae, se cayeron, se va a caer.* (intransitive root)
It fell, it falls, they fell, it is going to fall.

b. *Porque se mojó.* (transitive root)
Because it got wet.

Change of state, physical and emotional, accounted for an additional 10% of the tokens, impersonals for 9%, uncontrolled actions, irregular analogies, and grooming each accounted for 2% of the tokens. Examples of these, taken from our data, include the following:

(14) a. *No puedo aquí, aquí se va a dormir.* (change of physical state)
I can't here, here he is going to sleep.

b. S*e corta así .* (impersonal)
It is cut in this way.

c. *Pues ella se pegó así.* (uncontrolled action)
Well she hit herself like this.

d. *Ves, peintarte, mira.* (grooming)
Look combing yourself, look.

These results show that children acquire middle forms before they acquire reflexive forms, and suggest that focus on the pivotal moment of change may be what is driving early acquisition of this form. However, it is possible that a formal verb deletion rule was being used for the unexpected change forms that were derived from transitive verbs. In order to explore this possibility we reanalysed the data, separating out the middle forms with transitive roots, like *se rompió* (it broke) from those with intransitive roots, like *se cayó* (it fell). Table 4 shows these results. Middle forms with transitive roots accounted for only 10% of the occurrences of middle forms. The other 77% of middle

TABLE 4. *Percentage of the tokens of the middle forms of* se *which have intransitive and transitive roots*

Category	Number of tokens	Percentage of tokens
Middle forms with intransitive roots	124	77%
Motion	52	32%
Unexpected changes	33	20%
Change of state	16	10%
Impersonal	15	9%
Uncontrolled actions	3	2%
Irregular analogies	2	2%
Grooming	3	2%
Middle forms with transitive roots	16	10%
Unexpected changes	16	10%

form tokens could not be explained by the subject deletion rule. This provides even stronger support for the pivotal change hypothesis.

DISCUSSION

The results reported above strongly challenge the existing literature that views all uses of *se* as reflexive, derived from the reflexive form, or memorized linguistic chunks. They also demonstrate an alternative method of analysis that provides a more accurate picture of the wide range of functions performed by *se* and a more realistic picture of how *se* is acquired by young children. We will discuss each of these points.

On a gross level, the data demonstrate that the majority of *se* forms used by the Spanish-speaking toddlers were middle forms; only a small proportion (9%) were reflexives, and only a few of those was a pure reflexive. Thus, the claim that all uses of *se* are reflexive was not substantiated. A finer analysis, carried out to determine if nonreflexive uses of *se* were derived from reflexive forms (following Hurtado (1984), for example) provided no support for that hypothesis. First, if middle forms (including those that are derived from intransitive roots) are derived from reflexives, we would expect to see use of reflexive forms prior to and in greater quantity than middle forms in the period during which the form is being acquired. However, not only was the reflexive form used less frequently than middle forms, but there were only a couple of examples of pure reflexives. In other words, *se* was hardly ever used to establish coreference for split representations of the

'see oneself' type. Most examples were related to reciprocals, like *pelearse* (to have a fight with someone), or self addressed actions like *taparse* (cover oneself up). In addition, the middle forms that most closely resemble the true reflexive form (grooming activities and uncontrolled actions) were used with very low frequency (only 2% of the tokens were in each category). These results are striking because each child had access to a comb and a mirror in the experimental situation so he/she could play at grooming activities, and the language samples generally reflected the activities that could be carried out with the toys that were present. All these data support the claim that marking aspectual properties of the event is one of the fundamental functions of the clitic *se* rather than *se* being a derived value. While the data do not give direct evidence against innateness of the binding principles for anaphoric relations (recently defended by Bloom, Bars, Nicol & Conway 1994), they do provide clear evidence that these principles do not emerge early in the acquisition of Spanish. They also provide solid evidence to reject the claim that the middle functions of *se* must derive from reflexive constructions.

In order to be certain that our claim regarding the focalizing function of *se* was solid, we examined the middle forms that marked unexpectedness more carefully. Since some of those forms were derived from transitive verbs, the middle forms could have been derived by an agent deletion rule in those cases. However, when we determined the proportion of unexpected class forms that were derived from transitive and intransitive verbs, the vast majority were from intransitive verbs. For example, the most frequent type of example for unexpected events was *se cayó (la pelota)* ((the ball) fell down), a case of a sudden change with an intransitive verb. The percentage of unexpected markings with transitive derivations was very low (10% of the tokens in the entire language sample, 16 out of 155 tokens). These results all suggest that giving focus to a change of state is a more basic operation than deletion of an agent. This would suggest a cognitive rather than a formal syntactic motivation for the use of *se*. Langacker (1992) has proposed that there are two basic ways to construe an event. Ergative-absolutive languages contrast with nominative-accusative languages in that the former tends to start from the core of the event (the change of state) and use special marking for more elaborate actions. Nominative-accusative languages, on the other hand, start from highly elaborated processes and use the marking system to produce simplified events. The basic function of *se* in Romance languages is to mark an elaborated event to focus on its core; a simplification process that involves not only the deletion of an agent argument, but also the

selection of the crucial information necessary for the event to occur. The initiating causes and the procedural development of the action are downplayed when *se* is used. Maldonado (1988, 1993) has shown that the focusing function underlies the use of *se* to mark abrupt, sudden and unexpected changes in adult language from both synchronic and diachronic perspectives. Given the data described in this study, and the theoretical structure suggested by cognitive grammar, it is reasonable to propose that the earliest way of using the clitic *se* by Spanish-speaking children may be focalization rather than the deletion of an argument. The main function of middle *se* is to highlight the pivotal moment of change. Argument deletion can be seen as an extension pattern that develops from the focalization process.

Although it is clear from our data that the *se* form appears early and is used with a variety of verbs, we also need to consider whether the examples provided by the children in our study represent memorized lexical forms used as routinized chunks rather than analysed forms. The number of contrastive uses of the clitic *se* in our data strongly suggest that rote memorization is not a viable explanation. Intransitive verbs provide one example. There are many instances in which the same verb was used either with or without *se*. When *se* was used, the utterance referred to a focused change of state (i.e., it was a middle form) and when it was absent it referred to the full trajectory of the action, e.g., *se van los animales* (the animals are leaving) vs. *aquí va* (here goes) [as the child puts a block on top of another]; *vámonos el coche* (let's go the car) vs. *ve a ahí* (go there); *ya se durmió* (he already fell asleep) vs. *para dormir* (for sleeping) [as an answer to 'what is this?']. Other examples were provided by transitive verbs, e.g., *tómatelo* (drink it up) vs. *toma tu café* (drink your coffee). Additional examples were seen in the contrast of uncontrolled versus controlled action, e.g., *se pegó así ey* (he hit himself like this, yeah) vs. *le estoy pegándole* (I'm hitting it).[12]

Some utterances also suggested that even the middle form may not be fully mastered by young children. For example, in most cases *caer* was given the focalized marking (*se cayó* (it fell down)). However, examples like *ay cae aquí* (oops it falls here) are not clear.

Further evidence that *se* is not a memorized form for the children who participated in this study is provided by the variety functions for which it is used. The corpora contain examples of middle forms, such

[12] The double use of *le*: *le está pegándole* may signal awareness of the child to mark the presence of an affected dative participant.

as *se cayó* (it fell), *se rompió* (it broke), *se va de paseo* ((he) goes for a walk), reflexive or impersonal forms, such as *un espejo para verte* (a mirror to look at yourself), *se come* (it's for eating), and transitive indirect forms, such as *se lo di* (I gave it to him). Once again, it is clear from these examples that verbs used with *se* are not acquired as routinized forms. Children use the marker to express multiple functions and meanings.

The results reported in this paper support using a cognitive perspective to explain the earliest uses of *se*. Specifically, they suggest that Spanish-speaking children as young as 28–36 months of age already have different strategies for scanning a full fledged event like *ir* (to go) and locating the pivotal moment of change in verbs like *salirse* (to leave). The language samples contained contrasting examples of *se* and non-*se* forms for a number of verbs. For example, children used both *salir* and *salirse*, and *subir* and *subirse* correctly. The plain intransitive (non-*se*) forms require scanning the full path of the event from its initiation to its endpoint for correct use, while the *se* forms indicate a focus on the pivotal moment of change (i.e., the last portion of the event or the result of an action). As noted earlier, Terminal Prominence (DeLancey 1981) has been highlighted as crucial for a variety of syntactic phenomena related to transitivity, split ergativity, cross reference, etc., in adult speech. We believe that the middle form uses reported in this paper provide evidence of terminal prominence functioning in early language development. Additional data which support this claim exist in the literature. For example, the early emergence of morphological forms to mark the terminal part of an event is now well known. Slobin (1985) has documented this terminal prominence phenomenon, which he called the Result Perspective, across a variety of languages (including Hindi, Mandarin, Finnish and Armenian). He reported that the past tense or the perfect marking on the verb is initially used by children 'to comment on an immediately completed event that results in a visible change of state of some object' (Slobin 1985: 1181). The examples in which the perfect form of verbs was described in those studies are the same type as those found in this study (fall, drop, break, spill). Of particular note for our argument is the fact that perfective forms were used by the children described in Slobin to highlight the change of state undergone by the object. A prototypical example of the terminal prominence or result perspective phenomenon in child language is the acquisition of the Italian past participle. Antinucci & Miller (1976) have shown that in early language the participle agrees in gender with the object instead of keeping the neuter form. The use of the perfect form to highlight aspectual properties such

as the endpoint of an event has also been described for English (Smith 1980) and French (Bronckart & Sinclair 1973). Even use of past tense morphemes may be aspectual in early language development. While López-Ornat (1994) claims that tense is more important than aspect in early verbal morphology, Bybee (1994) has suggested, in accordance with findings in most adult literature, that the fundamental function of the past form in adult Spanish is aspectual.

Aspect is not the only syntactic form used to highlight the terminal part of an event; passive and middle voice markers accomplish parallel functions. In children's English the got + PARTICIPLE passive construction appears fairly early to focus on the result state (Slobin 1985). Berman notes that in Hebrew the result perspective is the first context in which children use the passive and that verbs 'which are highly result-focused (e.g., break) often emerge in the intransitive, middle voice pattern (e.g., *nisbar kadur* got:broke ball 'the ball got broken') and only later in the transitive pattern (*hu savar kadur* 'he broke:TRANS ball')' (Slobin 1985: 1182). Although we have not studied whether middle *se* shows up before transitive constructions in the study reported here, we have shown that it appears early in child language and before the use of pure reflexive constructions. From a cognitive perspective, this is consistent with Berman's (1985) findings. The cognitive salience of the terminal part of an event appears to be powerful enough that grammatical patterns, marking whatever occurs there, will develop quite early in the acquisition of language. The best forms for accomplishing this function are perfective, passive and middle markers.

Data from Spain, Chile and Argentina (Sebastián & Slobin 1994) also support the Mexican Spanish data reported here. The presence and focusing function of the clitic *se* is well established in the early stages of Spanish language development, although age of appearance and/or systematic use is not yet established. Sebastián & Slobin (1994) report that in Madrid the use of *se* to mark the completion of an event occurs when children are around seven years of age (although they note that even 3-year-olds have some differentiated use of *se* and non-*se* forms). Our Mexican data show that focusing on the terminal part of the event is a well established pattern as early as 28–36 months of age. Clear examples, almost identical to those given in Sebastián & Slobin (1994), in which a long developed event without middle marking contrasted with an inceptive change of state marked for *se*, appear with considerable consistency already at this age. Our data suggest that the focusing function of *se* is salient enough to emerge in grammar in the third year of children's life and to serve as an important cognitive motivation for acquisition of the clitic form *se*.

CONCLUSION

The results presented in this paper suggest that the earliest uses of the clitic *se* are middle forms rather than true reflexives. Middle forms are motivated by the need to focus on the critical moment of change, and aspectual phenomenon based on cognition. This is demonstrated in middle markers across many different languages. The early emergence of *se* in Spanish-speaking children is, therefore, best explained as occurring because of the cognitive salience of the action described by the verb which can be communicated with the middle forms of the clitic *se*.

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