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AN ANALYSIS OF VS PASSIVES IN SPANISH: EVIDENCE FROM AGRAMMATIC APHASIA

By

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ABSTRACT

AN ANALYSIS OF VS PASSIVES IN SPANISH: EVIDENCE FROM AGRAMMATIC APHASIA

By

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This paper will attempt to account for a seemingly problematic set of data, collected from diagnosed Broca's aphasic native speakers of Spanish in a study conducted by Beretta, Harford, Patterson and Piñango (in preparation). The data in question are Verb-Subject verbal passives (VS passives), allowed in Spanish and other Romance languages which were originally investigated, along with other sentences-types, in the framework of Yosef Grodzinsky's Trace Deletion Hypothesis (Grodzinsky, 1984).

The proposed analysis suggests, contrary to more standard views, that there is NP movement in VS passives in Spanish motivated by Case-marking. The NP-subject, base-generated in the object position cannot be Case-marked by the participial (Jaeggli, 1986; Baker, Johnson, Roberts, 1989). Consequently, it is forced to move to Spec;VP where it is nominative Case marked by Spec-Head Agreement (Guilfoyle, Hung & Travis (1991), Zanuttini, (1991)). Consequences of this analysis for other related structures and for Grodzinsky's default strategy will also be considered.

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I

INTRODUCTION

Eventhough the connection between brain impairment and language breakdown has been noticed and documented since biblical times (Pinker,1993), it is not until relatively recent years that, as Mauner, Fromkin and Cornell (1993) point out, "the characterization of disordered language resulting from focal brain damage has focused on aspects of language impairment relevant to questions of linguistic theory and normal language processing" (p.340)[1]. Agrammatic comprehension has been extensively researched for almost two decades now, (Caramazza and Zurif, 1976; Bradley, Garret, and Zurif, 1980; Schwartz, Saffran, and Marin, 1980; Caplan and Futter, 1986; Grodzinsky, 1986, Mauner et al. 1993, Hickok et al., 1993, among others), however, it is not until very recently that linguistic theory approaches to the study of such phenomenon have been put forward (Grodzinsky, 1986, 1990, Mauner et al. 1993, Hickok et al., 1993). As Mauner, Fromkin, and Cornell. remark :

> " Theoretical interest in aphasia is due in part to the fact that focal brain injuries not only result in selective cognitive disorders, but also may lead to specific impairments in either the construction of linguistic representations or specific language processing mechanisms. Aphasic deficits following brain damage may thus serve as a testing ground for theoretical models of the normal mental grammar. But, in addition, theories of grammar may help to provide an explanation for language deficits, if one takes the view that aphasic language can only be understood in relation to the normal, intact brain and mental grammar." (p.340)

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[1]On the neurophysiological side, syntactic comprehension deficits have been linked to anterior damage to the left hemisphere of the brain, also known as Broca's area, named after the famous pioneer in the study of language breakdown Paul Broca (Caramazza and Zurif, 1976).

In this paper I attempt to follow this approach, sharing, with the above mentioned researchers, the conviction that no linguistic deviation can ever be properly studied or understood if it is not framed within well-articulated theories of language that attempt to describe and explain the normal linguistic functioning of the brain. In the same manner, I support the view that linguistic deficits are relevant to linguistic theory because they provide us with a window into the inner workings of the brain thus allowing us to posit more accurate assumptions regarding the structure of grammar (see Grodzinsky, 1990).

In this context, linguistic theory, insofar as it is relevant to the phenomenon at hand is of utmost importance to those studying linguistic deficits. In that respect, a recent proposal in Government and Binding Theory (Chomsky, 1981), namely, the VP-Internal Hypothesis (Fukui & Speas, 1986; Kitagawa, 1986; Kuroda, 1986; Koopman & Sportiche, 1988, among others), has become consequential in the study of language breakdown because it has given us new insights to traditional structural syntactic analyses proposed by the theory, especially for languages which allow inversion such as Spanish.

As will be explained below, this new proposal for structural representation, in combination with already identified patterns of aphasic performance, reflected in hypotheses such as Grodzinsky's Trace Deletion, has shown the potential to offer more specific predictions, and generate further empirical questions regarding the patterns of sparing and loss in agrammatic performance. Such has been the case in the study of VS verbal passives in Spanish which as analyzed under the VP-internal subject hypothesis and other less novel proposals addressing the structural representations of the passive

construction (Jaeggli, 1986, Baker et al., 1989), has generated what could be a theoretically significant contrast with the Subject-Verb passive construction.

As mentioned above, one of the neuropsychologists who first framed the study of syntactic deficits in a theory of generative grammar was Yosef Grodzinsky. He has formally defined agrammatic comprehension in his Trace Deletion Hypothesis (1984, 1986, 1990) as a selective linguistic impairment caused by inaccessibility to or deletion of trace. This hypothesis makes a series of predictions on the level of performance of agrammatic aphasic patients based on:

a) the presence or absence of NP or Wh-movement in a sentence, and consequently presence or absence of a trace.

b) the ability of the brain damaged person to resort to an unimpaired, cognitively based, default strategy (Grodzinsky, 1990).

Sentence-types such as SV actives, SV passives, Object and Subject relative clauses, and raising construction, among others, are assumed by the current analysis to fall into the trace-"bearing" category. In all of them either NP- or Wh-movement, which has left a trace behind, is assumed to have taken place. On the other hand, sentences of the types such as VS actives, VS passives, and adjectival SV and VS sentences have been traditionally represented by the theory as trace-"free"[2]. No movement (except for that of V to T, (see Pollock, 1989) is expected to have taken place in those types of sentences. The inaccessibility to or deletion

[2]Actually, the term trace-"free" may be misleading since even in these sentences verb-movement is assumed to take place. However, the deletion of this type of trace is not assumed to have an effect on the semantic interpretation of the sentence. The term trace-"free" will refer solely to sentences with no NP- or Wh- movement.

of the trace in agrammatism then, is thought to be one of the factors that, in some particular instances, prevents the patient from arriving at the correct interpretation of the sentence.

An additional factor, relevant to the explanation of agrammatic performance, in the framework of the TDH, is the Default Principle which is defined by Grodzinsky (1990) in the following manner:

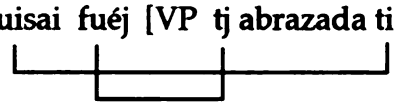
> "NPs that do not receive a theta-role syntactically are assigned a default theta-role. Or, stated more precisely in terms of GB theory: NPs in nonthematic positions are under the scope of some Default Principle that associates a theta-role to every nonthematic position" (p.83)

Grodzinsky emphasizes that this is a cognitively-based rather than a linguistically-based principle, since, as he points out, it is "the knowledge of observations about frequencies of occurrence" the agrammatic subject has and not "access to the theta-grid of the verb itself" that best predicts the level of performance of the agrammatic subject (p.87). The Default Principle is an integral part of Grodzinsky's description of agrammatic comprehension because it enables it to account for the instances when although there has been movement in the sentence, the final ordering of NPs coincides with the canonical phrase structure of the language (SVO for Spanish). This circumstance is assumed to provide the patient with a non-linguistic tool for arriving at the correct interpretation of the sentence. According to Grodzinsky's TDH then, it is the interrelation of those two elements, trace and the Default Principle, which constitutes the predictor of level of performance in agrammatism.

In the summer of 1993, a study on agrammatic aphasia was conducted with the purpose of investigating the Trace Deletion Hypothesis in native speakers of Spanish (Beretta, A., Harford, C., Patterson, J., and Piñango, M.M. (in preparation)). The sentences investigated were selected along the trace-bearing and trace-free line as predicted by GB theory. Although the performance results for all sentence-types were important for the investigation of the TDH, the results for VS passives were crucial because as they are not allowed in English (*Were washed the dishes by the man), they had not been investigated thus far. Furthermore, for this type of sentence, the TDH offered a very specific prediction of performance which contrasted with that made for its SV counterparts.

To illustrate the different predictions the TDH makes for SV verbal passives and VS verbal passives, I will briefly focus on the syntactic representations GB proposes for the two different structures. In the analysis of SV verbal passives, verb movement from V;VP to I;IP is assumed to take place. Furthermore, as proposed by Jaeggli (1986) the object NP moves to the pre-verbal subject position of the sentence (Spec;IP), as we can see in the following sentence:

(1) a. [CP[IP Luisai fuéj [VP tj abrazada ti [PP por Ana]]]]



Luisa was hugged by Ana

The prediction of agrammatic performance for this type of sentence (SV passive), based on Grodzinsky's TDH, is expected to be at-chance. The NP trace contained in the chain < Luisa_i, t_i > is not accessible to the aphasic. Consequen-tly, s/he has no way of knowing the thematic role of the pre-verbal NP Luisa.

At this point, the Default Principle is activated, allowing the aphasic to make use of the remaining word order which as it is presented in the sentence, has a pre-verbal NP that (due to the Default Principle) competes for agency with the NP in the *por* -phrase. As a result, the patient is forced to guess which NP is the agent of the sentence, hence the at-chance performance.

In the analysis of VS verbal passives, on the other hand, the NP-subject and the participial are assumed to remain in their base-generated position, only the auxiliary moves to I:

(2) a.[CP[IP Fuéj [VP [V tj empujado Juan [PP por Maria]]]]

Was pushed Juan by Maria

Juan was pushed by Maria

Based on the Trace Deletion Hypothesis, this type of sentence is predicted to yield an Above-Chance performance. No movement (of NP's) is posited, no traces are present in the structure, so the interpretation of the sentence by the agrammatic patient is expected to be correct.

However, when this structure was tested on agrammatic aphasic patients. The above prediction was not met. That is, the agrammatic performance for VS passives in Spanish was found to be at-chance by Beretta et al.. Crucially, except for the SV agentless, all the other structures tested: SV and VS actives, SV verbal passives, subject and object embedded relative clauses, among others, met with consistency the predicted levels of performance.

There may be several independent causes for this particular unpredicted performance. First, the study protocol could be at fault. Something in the way Beretta et al.'s study was conducted yielded these undesirable results which would be then a consequence not of inadequate theoretical grounds but of faulty data collection procedures. Second, it could be argued that the Trace Deletion Hypothesis is wrong. That is, the reason the agrammatic aphasic patients performed At-Chance in this type of structure was not due to the deletion of or inaccessibility to the assumed trace but to disruption of other syntactic elements or general cognitive factors that impeded the correct interpretation of the sentence.

However, we observe that all the other structures (SV actives and passives, VS actives, relative clauses, etc..) tested in that study met the predictions, and further, that a clear pattern of performance emerged for each of them by all six subjects tested. Moreover, the findings coincided with Grodzinsky's and others' previous findings in anglophone agrammatics. Consequently, the failure of the prediction for VS passives does not seem to constitute sufficient grounds to discard the Trace Deletion Hypothesis as a viable explanation of agrammatic performance.

Third, we could argue that the syntactic analysis applied to the structure that yielded the specific prediction is deficient. So, it does not adequately represent the structure. This could be further supported by the fact that another comparable structure, namely, VS adjectival passives (where crucially no movement is expected by the theory) obtained the predicted Above-Chance performance. This may suggest that it is indeed the syntactic analysis of the sentence and not the TDH that is in need of revision.

I will pursue this last option as an exercise in syntactic analysis that a) incorporates and tests current theoretical trends, and b) may motivate further empirical questions for agrammatism. I will explore the argument that the syntactic analysis used for this structure (VS passives) so far is inadequate, and accordingly I will propose an alternative one aimed at accounting for these agrammatic data and other related structures. The proposed analysis will differ from the analysis utilized in Beretta et al. in that it will posit NP; VP movement to Spec;VP, in order for it to be nominative Case-marked possibly through Spec-Head Agreement, without eliminating the possibility of participial verb-movement to I, which will be considered to be optional.

The paper will be organized as follows: First, a more extended account of agrammatism, the Trace Deletion Hypothesis (TDH), and the various predictions of performance will be presented. Second, the study on agrammatism in Spanish conducted by Beretta et al. (in preparation) will be described along with a detailed analysis of the sentence-types investigated in that study. Third, an alternative syntactic analysis that will meet the original predictions generated by the TDH will be suggested, and finally, possible implications for related constructions and for Grodzinsky's default principle will be proposed.

II

AGRAMMATISM

In the area of language breakdown, agrammatism has been identified as a syndrome which selectively impairs specific linguistic features. One of the defining characteristics of agrammatic comprehension, as formulated by Grodzinsky (1986, 1990), in the Government and Binding framework (Trace Theory, (Chomsky, 1981)), is the deletion of, or inaccessibility to trace (produced by both A and A'–movement, [3]) which has been captured in the Trace Deletion Hypothesis (TDH). It is important to point out that the TDH is not a theory of agrammatism, rather, as Grodzinsky himself puts it, "it is a descriptive generalization that captures given data in an economical way, while capitalizing on distinctions provided by a well-motivated theory of syntactic representation. It does so by making a minimal number of assumptions about the agrammatic deficit. Only in this way can it later be tied to theoretical issues." (p.84). This is a very important notion, as it supports the view that agrammatism can only be understood when formulated within a well-articulated theory of grammar. As such it has the potential to serve as an accessory to syntactic research.

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[3] A-movement is that which is performed by a constituent to an argument position, i.e., NP-movement. A'-movement is undergone by a constituent to a non-argument position, i.e., wh-movement. When the movement is performed, a *trace* t_i(carrying linguistic features and properties of the constituent it represents) is left behind. This non-lexical element with no phonetic representation is the one assumed to be deleted or inaccessible in the linguistic comprehension of the agrammatic patient.

The Trace Deletion Hypothesis

As defined by Haegeman (1990), a trace is an "empty category which encodes the base-position of a moved constituent" (p.285). The trace carries the theta-role information corresponding to the NP occupying that place at the D-structure level of representation. When the trace becomes inaccessible or is deleted (due to brain damage) there is no syntactic way of connecting the moved NP with the thematic role (i.e., Agent, Patient, Theme etc...) that NP has. Consequently, when the aphasic patient is faced with a sentence containing a trace, in the presence of another competing NP, s/he will either come up with an incorrect interpretation of the sentence, will guess, or will resort to another linguistic strategy to come up with the correct interpretation of the sentence.

Borrowing from Haegeman (1990), I will now proceed to layout a summary of the properties attributed to NP-movement[4] in GB theory illustrated in the passive constructions analyzed here. By doing so I attempt to determine the scope of the problem at hand, particularly, with respect to the independent theoretical principles (i.e., Case theory, Theta Theory, Projection principle) interacting in the process of passivization.

In English, when a verb is passivized, NP-movement from object to subject position is assumed to take place. In NP-movement the moved element is an NP which leaves a trace behind. The trace is coindexed with the moved element (the antecedent) with which it forms a chain. The movement is

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[4] Notice that so far I have only dealt with instances of NP-movement (as opposed to Wh-movement). This will be, in fact, the only type of movement to be considered in this paper.

obligatory, that is, something in the construction of the sentence has to motivate the movement of the NP. The landing site is an argument position to which no theta-role is assigned (a theta-bar position), but which is case-marked. Accordingly, the originating site (site from which the NP is moved) is not a case marked position. Consequently, the chain formed by trace and antecedent is assigned one theta-role (assigned to the trace, the foot of the chain) and one Case (assigned to the NP, the head of the chain) (Haegeman, p.290).

As we can see, GB theory stipulates very specific requirements a sentence undergoing passivization must meet, particularly so when it refers to landing site, and theta, and Case assignment. This is an important point, which I will be addressing below, since it is the motivation for re-analysis of VS passives in Spanish I intend to propose here.

The Default Principle

The Default Principle has been defined by Grodzinsky (p.106-107, 1990) as follows:

> "If a lexical NP has no theta-role (that is, it is a non-thematic position), assign it the theta-role that is canonically associated with the position it occupies, unless this assignment is blocked. In this case assign it a role from the next lower level in the Thematic Hierarchy."

This principle, which can roughly be translated as the canonical word order of the language in question, has been invoked by Grodzinsky as the default cognitive strategy to which the agrammatic patient resorts when faced with a trace-bearing sentence in which to NP's are competing for the agent theta

role interpretation. It is assumed that if after the movement the remaining word order of NPs in the sentence coincides with the canonical word order of the language, the patient will use this order as the means to determine agency in the sentence, since s/he will be expecting the subject NP to bear the agent theta-role. This principle then, will be useful to the agrammatic patient in those instances when regardless of movement the pre-verbal-NP bears the agent theta-role. In this case, the patient is attributing agency through canonical order and not through an A-chain. However, in the cases when there is another NP competing for agenthood (i.e., the NP object of a preposition), the patient cannot resort to this strategy and is forced to guess (giving an at-chance performance)

In this paper, I want to redefine this default strategy as a linguistically based mechanism which is part of the linguistic competence of the speaker and which is assumed to be spared in agrammatism. As mentioned before, Grodzinsky proposes that the Default Principle is cognitively based on the observation that the agrammatic subjects do not invariably assign agency to the subject position, which would yield a below-chance performance (see Grodzinsky, 1990 for more detailed discussion of this issue). However, it seems to me that when he invokes canonical encoding of theta roles he is alluding to linguistic knowledge which is still conforming to such knowledge as the thematic hierarchy, eventhough is not precise knowledge of the theta-grid of the verb as he points out (p.87). The default strategy then will be taken to be the canonical phrase structure of the language, assumed to be SVO for Spanish, on which theta roles are encoded by default following a thematic hierarchy (Jakendoff, 1972; Grimshaw, 1990; Dowty, 1991). Furthermore, I will assume as is traditionally done in the literature, that the assignment of thematic roles is done by argument selection (Dowty, 1991).

Predictions

The TDH in combination with the Default principle yields specific predictions of level of performance in agrammatic subjects. The predictions go from Above Chance (correct interpretation), to At Chance (guessing), to Below Chance (incorrect interpretation). The presence of movement by itself, and consequently the presence of trace in a sentence, does not directly predict the level of performance. The actual indicator of level of performance is the combination of movement and the order of the NPs in the sentence at S-structure that results from the movement. That is, if as a result of the movement (NP) the first NP the agrammatic subject encounters in the sentence bears the agent role, the patient will correctly assume that that NP is the subject of the sentence and that the theta role of that NP is agent (such as in the case of subject-relative sentences). As we can see this process is taken to be independent of the A-chain that is assumed to maintain the connection between the NP an its trace bearing the theta role. The patient attains an above-chance performance but for different reasons. On the other hand, the patient will attain an at-chance level of performance when s/he is forced to guess the theta assignments of two NP's, competing for agenthood, as in the case of SV passives (see Grodzinsky, 1986).

III

AGRAMMATISM IN SPANISH

Now that I have explained the main postulates of the TDH and the Default Principle, I will present and discuss the results of a study conducted in 1993 with the purpose of investigating the TDH in Spanish (Beretta et al. (in preparation)). Spanish was chosen for this study because it presented an interesting variation in passivization, namely, it allowed for VS verbal passives. This circumstance was relevant for the study of agrammatism because as it is traditionally represented, there is no movement in VS verbal passives (Beretta et al.). If there is no movement, there is no trace; consequently, the prediction of performance that the TDH would make for this type of sentence would be above-chance.

The data was collected from monolingual aphasic patients, native speakers of Spanish, diagnosed with Broca's Aphasia [5]. The subjects were selected based on a screening test containing SV/VS active sentences and SV passive sentences. The experimental test was composed of 160 randomized sentences belonging to the determined sentence types. The patient was presented with a sentence and a corresponding plate of three pictures. The task was to select the picture that best represented the meaning of the sentence uttered. As was explained, this study was designed to highlight the contrast between trace-"bearing" and trace-"free" sentences allowed in Spanish, in order to investigate

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[5] Here it should be noted that the means of determining the nature of the linguistic impairment of the patients tested was set by the experimenters through a screening test and not by standardized aphasia tests. However, the term Broca's Aphasia is still utilized as a way of describing patients with anterior lesions which so far has been the type of lesion found in identified agrammatic aphasia patients.

the TDH. The trace-"free" type of sentences were (based on the syntactic analysis): SV Actives, VS Actives, and VS passives. The trace-"bearing" type of sentences were: SVpassives, Subject extraction Relative Clauses. Some other types of sentences were tested[6], however, the sentence-types I have chosen for this paper (see 3, 4, 5 below), succeed in illustrating the relevant contrasts.

The order of this section will be the following: First all the relevant structures tested in Beretta et al., sharing a common syntactic representation with the VS passives will be analyzed. Second, the appropriate prediction for agrammatic performance under the TDH, for each sentence-type, will be presented. The objective of this section is to show the different predictions made by the TDH based on the characteristics of the syntactic representations, and the interrelation of the GB principles, of the sentences in question. This will give indirect support to the revision of the syntactic structure for VS passives I intend to propose here.

SV Actives

In this type of sentence, both NP and verb movement are assumed to take place. The verb, base-generated in V;VP moves to I;IP in S-Structure. The subject NP based-generated in the Spec;VP moves to I. The resulting word order however, is still SVO, the canonical word order in Spanish. Consequently, when the patient is confronted with this type of sentence s/he can make use of the canonical word order to determine theta-assignment:

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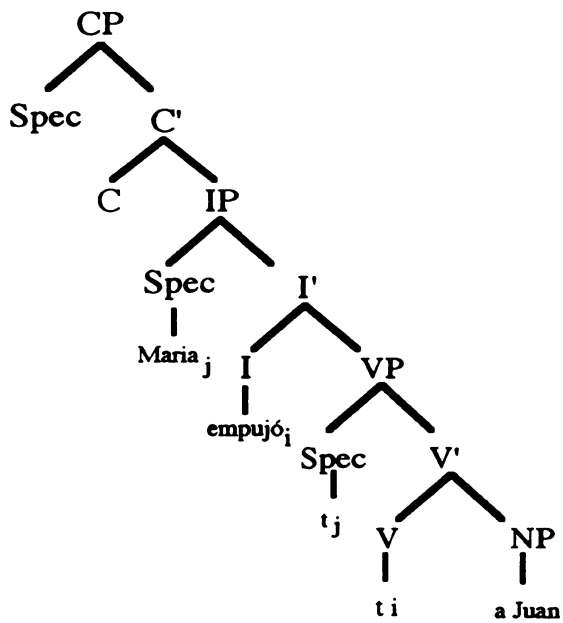
[6] Those types were: agentless passives, object extraction relative clauses, and raising construction.

(3) a. Maria empujó a Juan

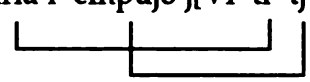
Maria pushed to Juan

' Maria pushed Juan'

b.



c.[CP[TP Maria i empujó j[VP ti tj [NP aJuan]]]]



An above-chance performance is predicted for this type of sentence. This prediction was confirmed in all of Grodzinsky's studies and in Beretta et al. (See Appendix A for table of results)

VS Actives

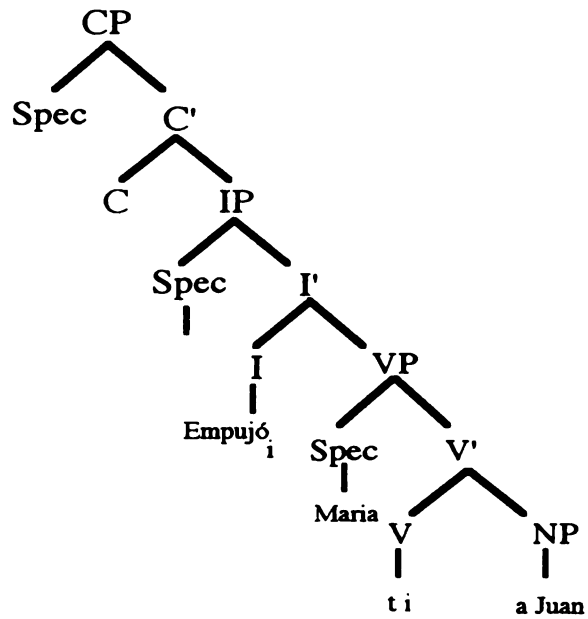
In this type of sentence all the constituents are in their base-generated position. Only verb movement to I is assumed to have taken place. The trace left by the verb is not expected to have any consequences for theta-role assignment.

(4) a. Empujó Maria a Juan

pushed Maria to Juan

'Maria pushed Juan'

b.



c. [CP[IP empujó j [VP Maria tj [NP a Juan]]]]

Agrammatic performance is predicted to be above-chance in this type of sentence. There are no traces that can get in the way of the correct thematic interpretation of the sentence. This prediction was met in Beretta et al.'s study.

SV Passives

In this type of sentence NP-movement is assumed to have taken place. The object-NP, usually bearing the patient/ theme role, moves to the subject

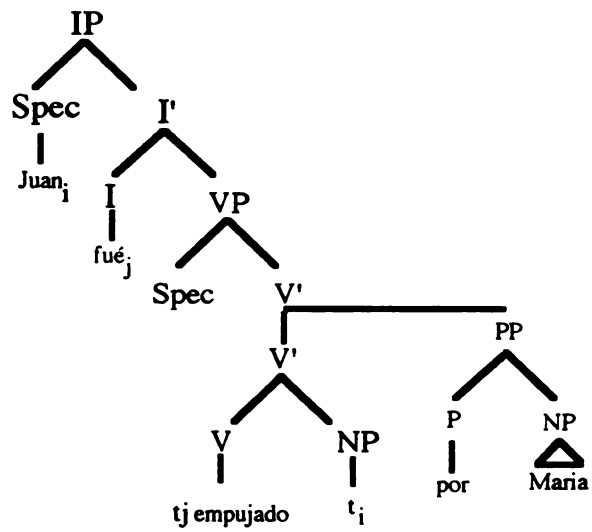
position (Spec;IP) to be nominative case-marked leaving a trace behind. Assuming that the Agent Phrase (by-phrase) is present, and adopting Grodzinsky's argument of competing agency between the two present NP's, the patient appears to be confronted with two potential Agent NPs, one in the por-phrase, and the other in the pre-verbal position:

(5) a. Juan fué empujado por Maria[7]

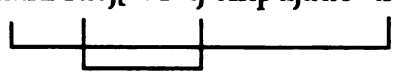
Juan was pushed by Maria

'Juan was pushed by Maria'

b.



c. [CP[IP Juani fuéj[VP tj empujado ti [PP por Maria]]]]



[7] The examples given here do not come from the actual Beretta et al. study. They only attempt to illustrate the contrast between the trace-free and bearing sentences. The actual screening and test sentences met the following additional criteria: a) the two NP's were equally likely to perform the action (plausibility criterion) and b) they were both of the same gender since in Spanish the verb has a gender marker which clearly points to the object of the action. This would have been an indicator of thematic assignment to the patient, consequently it had to be controlled for.

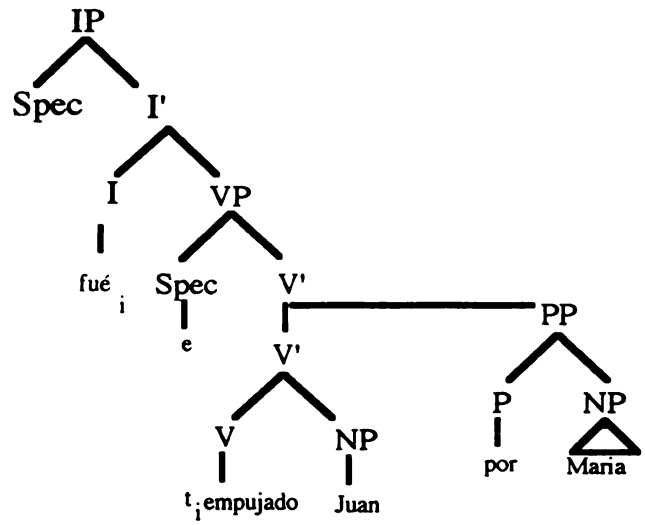
IN this type of sentence, performance is predicted to be at-chance (obtained in both Grodzinsky's and Beretta et al.'s results) because the patient has to guess who the agent is. Notice here that the canonical word order strategy poses a conflict for the patient. Her/his phrase-structure order (SVO) and the argument selection mechanism are assumed to be intact. Therefore, her/his first inclination is to assign agency to the pre-verbal NP (the one occupying the subject position of the sentence which usually bears the thematic role of agent). However, s/he does not consistently misinterpret the sentence precisely because s/he recognizes that both NPs could be the agent, and that only one agent is allowed in each sentence: the first NP could be the agent because of its pre-verbal position and the second NP could also be the agent because it is contained in the *por* -phrase (*by* -phrase for anglophones), a prepositional phrase that contains the agent-NP. Therefore, half of the time the patient will assign the agent thematic role to the NP in the subject position, and the other half s/he will assign it to the NP in the by-phrase.

VS Passives

The traditional syntactic analysis proposed for VS passives, the focus of this paper, assumes only verb movement to I. That is, the auxiliary verb moves to I, leaving behind a trace and the participial (empujado), and the object remains in its base-generated position as in the VS Actives:

(6) a. Fué empujado Juan por Maria
was pushed Juan by Maria
'Juan was pushed by Maria"

b.



c. [CP[IP Fuéi [VP ti empujado Juan [PP por Maria]]]]

The prediction for agrammatic performance for this type of sentence, based on this analysis, is above-chance. It is assumed that the agrammatic patient would be able to correctly interpret theta-assignment for NPs since those NPs have remained in their base-generated positions. No guessing by the patient is expected because no movement is assumed (so trace deletion is not a factor in the interpretation of the sentence). However, when VS passives were tested on agrammatics, the performance on this type of sentence was found to be at-chance (Beretta et al.), thus not meeting the prediction. In the following section I will attempt to offer an account for this at-chance performance of agrammatic aphasic patients in VS passive sentences in Spanish in terms of an alternative syntactic analysis. In addition, the new analysis is intended to give support to the canonical word "strategy" proposed by Grodzinsky, not as the default heuristics

accessible to the agrammatic patient, but as a syntactically generated tool assumed spared in agrammatism.

IV

ANALYSIS OF VS PASSIVE CONSTRUCTION

The proposed analysis framed in the principles of GB Theory (Chomsky, 1981) draws from VP-internal subject hypothesis (Fukui & Speas, 1986, and others), Jaeggli (1986) and Baker et al.'s analysis of passives (1989), and Guilfoyle(1992) and Zanuttini(1991)'s Spec-Head agreement proposal. Its main purpose is to argue for a syntactic structure for VS passives in Spanish that allows for movement of the NP in the object position to the subject position of the sentence, which is, crucially, not a pre-verbal position.

The sequence of argumentation will be the following : First, I will present the general properties of passive constructions which will be assumed to apply to Spanish passive constructions. Second, based on those properties I will argue that not positing NP-movement in VS-passives violates one of the properties of NP-movement, namely, Case-filter. I will propose, building on Jaeggli and Baker et al.' s analyses of passive constructions, that NP-movement from NP;VP to Spec;VP is motivated by Case-marking. Furthermore, in the spirit of Zanuttini(1991) and Guilfoyle et al. (1991), I will suggest that Spec;VP is an appropriate landing position for the object-NP as it is case-marked by Spec-Head agreement.

Passivization: Theoretical Background

Haegeman (1990) summarizes the general properties of the passive construction in English as follows:

i) Absorption of the case assigning properties of the verb: a passive verb fails to assign structural case complement NP; this NP has to move to a position in which it can be case-marked.

ii) Absorption of the external argument of the verb: the D-structure subject position is generated empty. (Haegeman, p.296)

As we can see the properties of passive constructions are formulated based on the projection principle, trace theory ,and case theory. This is significant in that it entails that any new construction involving passivization will be constrained by these principles. Now, I will proceed to discuss the principles involved in passivization and their implication for VS passives, the syntactic construction in question.

Theta Criterion

The theta criterion has been defined by Chomsky (1986) in the following manner:

> "Each argument A appears in a chain containing a unique visible theta position P, and each theta position P is visible in a chain containing a unique argument A". (p.97)
> "A position P is visible in a chain if the chain contains a Case-marked position". (p.96)

In other words, every NP in a sentence must be assigned one unique thematic role and all thematic roles must be assigned to one and only one NP by a predicate in a given sentence. This is one of the most fundamental principles in

GB theory and as such it is relevant the analysis of passive construction and as we have seen to the study of agrammatism.

Case-Filter

Two main assumption are involved in the concept of in Case-filter:

a. Every overt NP must be assigned abstract Case

b. Case is assigned under government. (Haegeman, p.156)

In the VS passive construction, we observe that due to verb's Case adsorption the NP is forced to move (Jaeggli, 1986). The next available landing site for that NP is Spec;VP. As mentioned above, Case is assigned under government, however, VP is a barrier for Government (Chomsky, 1986) so the only way that Spec; VP can be Case-marked (if the possibility of VP adjunction, as desired, is not considered) is through Spec-Head agreement.

Passivization in English

Analysis of the passive construction

Baker, Johnson and Roberts (1989), building on Jaeggli's classic proposal on the passive construction, put forward a theory which makes use of the "interplay of autonomous forces" among which we find " the well-formedness conditions on arguments: the theta-criterion with the related Visibility Condition, the Projection Principle, and conditions on binding" (p.219). In their theory they propose the idea that the passive morpheme *-en* (*-ado* in Spanish) is an argumental affix attached to INFL (p.249). They give support to it by providing evidence that *-en* behaves as a syntactically active argument when analyzed under the principles of theta-theory, Case-theory , binding theory, and X-bar

theory. If *-en* is an argument, as Baker et al. propose, we must then assume that it is properly licensed. This is so accomplished by assuming that-*en* is the recipient of the external theta-role (Jaeggli, (1986)) which through some syntactic mechanism then transmits it to the NP contained in the by- phrase (see Mauner et al. (1993) for some suggestions regarding this mechanism). This also accounts for the optionality of the*by* - phrase. Following Jaeggli, Baker et al. assume that a verb when passivized still assigns both theta roles (see Grimshaw (1990) and Burzio (1986) for opposing views on this point) but loses its ability to absorb Case, causing the post-verbal NP position (object position) to remain caseless. This is what, in the periphrastic passive (the only type allowed in English), motivates NP-movement from the object position NP;VP to the subject position Spec;IP which is case marked by INFL. We observe this process in the following sentence:

(7) a. e was push-ed Jill by John (D-Structure)

b. Jilli was push-ed ti by John (S-structure)
└──────────┘

In this paper I adopt this same line of argumentation applying it to the analysis of VS passives in Spanish. I want to suggest that as the verb is passivized, it loses the ability to Case-mark, thus motivating NP-movement. However, in SV passives, the landing position for that NP is not, as in the English case, Spec;IP, rather, the post-verbal landing site would be Spec;VP, which, like Spec;IP, is a Case-marked non-argument position. In the following section, I proceed to explain the conditions of such Case-marking.

Case assignment by Spec-Head Agreement

Guilfoyle et al.(1992) explore the idea of case-marking by Spec-Head agreement (see Belletti in Zanuttini (1991) for an independent proposal of Spec-Head agreement). The underlying assumption of this proposal is that Case can be assigned through an indirect syntactic mechanism which they call Spec-Head agreement. Such mechanism entails that a structural position can be indirectly Case-marked if it meets some specified requirements. This is a departure and maybe a challenge to previous proposals (Stowell, 1981) which state that for Case-marking to take place, there cannot be intervening material between Case-assigners and their "assignees". This would constitute a violation of the Adjacency Requirement which is predicted to yield an ungrammatical sentence (Haegeman, (1990) p.167).

The main objective of Guilfoyle, Hung, and Travis (1992)'s article is to propose a structural account for the assumption that in Austronesian languages (i.e., Malagasy, Tagalog, Cebuano, and Bahasa) there are two subject positions which can be simultaneously licensed. Such an account would explain the split-like properties for the analysis of subjects in those languages. They point out to some facts about those languages (i.e., word order, and cross-linguistic variation) which seem to provide support to the idea of a VP-internal subject position (Spec;VP), in addition to the traditional subject position, Spec;IP, found in the literature. Guilfoyle et al. argue that "if an argument is Case-marked in its theta position, it may remain there", such as in the case of Spec;VP, however, they continue, if that is not the case, the NP "must raise to the SPEC of IP position where it is Case-marked via Spec-Head agreement with INFL" (p.376). In this fashion, they account for the instances where the two subject positions (Spec;IP

and Spec;VP) are licensed simultaneously, via Case-assignment from V and/or INFL (p.379), at S-structure, in addition to explaining the seemingly problematic properties (for the theory) of subjects in these languages.

For this paper, what is relevant of the previous argument is the idea of Spec-Head agreement which is assigned by INFL to an NP in a non-argument position. The main constraint to this type of Case-assignment appears to be that the position to be Case-marked be a non-argument position (not theta-marked). I will apply this argument to the analysis of VS passives in Spanish and suggest that in a VS verbal passive construction, Spec; VP is a non-theta-marked position, therefore a non-argument position, and consequently, it can be Case-marked via Spec-Head agreement. In other words, I want to suggest that as Spec; IP is a non-theta position in the active construction, Spec;VP is a non-theta marked position in the passive construction. Consequently, it would be subject to the same Case-marking properties as Spec;IP, namely, the property to be Case-marked by I;IP through Spec-Head agreement.

VS passives

Based on the principles and proposals just discussed, the VS passive construction would be represented in the following manner :

(9). D-Structure: [IP fué e [VP e empujado Juan [PP por Maria]]]]
was pushed Juan by Maria

'Juan was pushed by Maria'

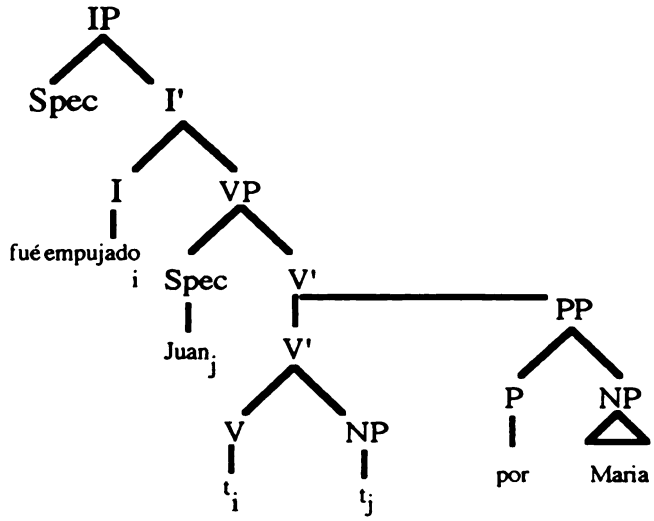
(10). S-structure: [IP fué empujado$_i$ Juan$_j$ [VP t_i t_j [PP por Maria]]]]
was pushed Juan by Maria

'Juan was pushed by Maria'

(11). a. Fué empujado Juan por Maria
was pushed Juan by Maria

'Juan was pushed by Maria'

b.

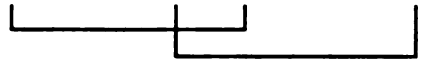


The landing site of the NP-subject is assumed to be Spec;VP. This position is (nominative) Case marked through Spec-Head agreement by INFL. As sketched above, the motivation for NP movement is suggested to be nominative Case assignment in the spirit of Jaeggli's analysis of passives. That is, passivized verbs are assumed to assign an external theta-role to the participial morphology *-en* (Jaeggli, 1986), and to suppress assignment of structural Case (accusative Case). Failure of the verb to Case mark the NP motivates this NP to move to a Case marked, non-argument position: Spec-VP.

Finally, one independent piece of evidence for positing NP-movement to Spec;VP is the grammaticality of sentences like (11) where the auxiliary

predictably moves to I;IP and the passivized verb remains its base-generated position, this instance crucially supports the suggestion that the Object-NP *Juan* is not in its base-generated position (NP;VP) but in the proposed Case-marked position Spec;VP:

(12) [IP fuéi [VP Juanj ti empujado tj [PP por Maria]]]]



was Juan pushed by Maria

'Juan was pushed by Maria'

VS passives and Agrammatic data

NP movement to Spec;VP is motivated by Case theory since the passivized verb is unable to assign accusative Case to its object. The NP in the object position moves to Spec;VP where it is assigned nominative Case through Spec-head Agreement. We see that the word order (VS) remains the same regardless of movement.

The fact that in VS passives the word order does not change after movement, would lead us to believe that the prediction for performance on this type of sentence should be above-chance (given the above-chance performance in VS actives.[8]). In fact, that is the prediction that Beretta et al. had for this type of sentence. However, as we have seen a crucial difference between a VS passive sentence and its active counterpart is that in the VS passive there is NP movement (from object position to Spec;VP, motivated by Case-marking)

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8 Remember that in VS actives, the performance was predicted, and found, to be above-chance because no movement was assumed in the sentence (except for V to T). This assumption was carried over to VS passives with the corresponding prediction.

contrary to what Beretta et al. assumed. This movement leaves a trace, understood to be deleted or inaccessible in agrammatism. Based on this, we should expect a deviation in performance. Furthermore, the Default Principle does not help in the interpretation of the sentence because the word order of the SV passive is not SVO, so, the agrammatic patient cannot make use of any cognitive-strategy to determine the correct interpretation of this passive construction. The deviation in performance occurs because with the deletion of the trace both NPs (the post-verbal NP and the object of the preposition) seem to be equally likely to bear the agent theta-role, the post-verbal NP, because it is the first NP in the sentence; the NP;PP, because it is contained in the , the post-verbal NP, because it is the first NP in the sentence; the NP;PP, because it is contained in the *by-* phrase. The competition between the two NP's is what forces the patient to guess. Consequently, the prediction for agrammatic performance in VS passives sentences should be expected to be at-chance. Such were indeed the results obtained in the study of agrammatic performance in Spanish (Beretta et al.).

Implications for the Canonical Word Order "Strategy"

The following are the implication the analysis I have proposed has for the Default Principle (renamed by me as the Canonical word-order strategy:

a) it is directly constrained by the structural characteristics of the language in question. That is, if the canonical word order of Spanish were not SVO, the predictions would change accordingly (performance in VS passive sentences would be predicted to be above-chance).

b) The canonical word order is part of the structure. This is particularly evident in Spanish where a VS order (in the passive) does not help theta-assignment even though it represents D-structure which is assumed to be spared in agrammatism (as the results for VS actives demonstrate). It is only in those types of sentences where, regardless of presence or type of movement, the word order at S-structure reflects the canonical order, when the patient is predicted and attains an above-chance level of performance. Furthermore, in sentences where no A or A′ movement is expected to have taken place, the patient attains an above-chance performance despite of the fact that a different type of NP inversion has taken place. Such is the case of VS adjectival passives (Beretta et al. (in preparation)).

V

CONCLUSIONS

In this paper I have attempted to account for an unpredicted set of data collected from agrammatic subjects. The approach has been a syntactic one; meaning that, instead of questioning the trace-deletion hypothesis (which set the predictions for the data), I chose to revise the syntactic analysis that gave way to the prediction. The analysis crucially introduces the idea of NP-movement in the structure, thus creating a trace which is eventually deleted in brain damaged patients. The deletion of this trace coupled with the fact that the resulting word order does not coincide with the canonical phrase-structure order of the language prevents the patient from attaining the correct semantic interpretation of the sentence. By positing NP-movement and the subsequent deletion of the trace the agrammatic data in question is accounted for in a manner compatible with previous findings on other similar sentence-types. Furthermore, this analysis gives indirect support to the canonical word order strategy not as a cognitive strategy but as a basic syntactic generated tool. The main motivation for the re-analysis has been the data collected from agrammatic Spanish speakers, which I have taken to have theoretical implications. To that effect, I invoked independent syntactic evidence, namely case-assignment by Spec;Head agreement which although theory-internal is well accepted in the literature.

Eventhough the ideas I present here could be regarded as reasonable, some very important problems are worth mentioning. One problem involves the expansion of Case-marking to Spec-Head agreement. I believe that this point is of

no small importance since Case Theory, along with Theta Theory and X-bar Theory, stands as one of the foundations of Government-Binding Theory. As such, any manipulation of its properties, must be done very carefully, and the implications of such manipulations must be laid out as thoroughly as possible, so as to avoid the risk of converting it into an all-purpose tool and consequently robbing it of its theoretical value[9]. This is particularly true in the above analysis since as I have presented it, no clear constraints were invoked which would have made this type of case-marking more theoretically meaningful. Another problem with this analysis, and the Trace Deletion Hypothesis in general is that it makes use of a default strategy as a factor in the explanation of the data. I find this problematic since to the extent that the linguistic deficit is linguistically-based, it should be accounted for by linguistically-based principles. Here I have attempted to get away from Grodzinsky's cognitively-based principle by trying to redefine the Default Principle as roughly the canonical word-order of the language, however, I do not believe that is an elegant solution to the problem (for linguistically-based accounts see Mauner et al., Hickok et al. and Beretta et al.)

Finally, as was explained in the introduction, this re-analysis was done as an exercise on GB syntax that incorporates recent theoretical trends and may motivate further empirical questions. As an exercise, however, only the sketch of the argumentation has been presented and it is clear that more independent evidence must be brought into the discussion for it to have solid grounds and more interesting theoretical consequences.

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[9] pointed out to me by Carolyn Harford.

VI

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VII

APPENDIX

Table 1
Results of the study on agrammatic aphasia in Spanish

Conditions	subject 1	subject 2	subject 3	subject 4	subject 5	subject 6	Mean
SVO actives	1(90%)	2(80%)	1(90%)	1(90%)	0(100%)	2(80%)	1.17(88%)
VSO actives	2(80%)	0(100%)	6(40%)	3(70%)	0(100%)	0(100%)	1.83(82%)
SV verbal passives	9(10%)	5(50%)	5(50%)	6(40%)	6(40%)	6(40%)	6.17(38%)
VS verbal passives	6(40%)	6(40%)	4(60%)	0(100%)	4(60%)	5(50%)	4.17(58%)
SV adjectival passives	4(60%)	1(90%)	5(50%)	3(70%)	2(80%)	3(70%)	3.00(70%)
VS adjectival passives	2(80%)	2(80%)	1(90%)	2(80%)	0100%)	4(60%)	1.83(82%)

Source: Beretta, Harford, Patterson and Piñango (in preparation), Michigan State University.