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## On the metacognitive dimension of suspended syntactic constructions. A descriptive study on aphasic Spanish speakers

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### Abstract

By taking into consideration conversational outputs from aphasic Spanish speakers, a functional characterisation of suspended syntactic constructions will be provided here. Suspensions of syntactic constructions may be initially thought of as attributed to a language processing deficit in people with aphasia, which is, in fact, only partly the case. An examination of conversational data demonstrates, however, that a comprehensive explanation of syntactic suspensions requires a re-assessment of this phenomenon in the realm of meta-cognitive processes associated with language behaviour. Five general types of procedures and contexts for suspended syntactic constructions will be proposed and discussed in this paper. They differentially involve a series of metacognitive processes such as monitoring for anticipation and prevention of foreseeable mistakes, intersemiotic control of language production and communication by the use of gesturing, motivational and intentional aspects associated with language use, collaborative tasks in language production and theory of mind phenomena.

*Keywords:* Aphasia; Conversation Analysis; Executive Functioning; Metalinguistic Abilities; Syntax.

### Dimensión metacognitiva de las construcciones sintácticas suspendidas: Estudio descriptivo con pacientes afásicos españoles

#### Resumen

En este trabajo se presenta una caracterización funcional de las construcciones sintácticas suspendidas tomando en consideración conversaciones de hablantes de español con afasia. Las construcciones sintácticas suspendidas pueden ser inicialmente concebidas como un déficit en el procesamiento lingüístico de las personas con afasia. Sin embargo, un examen de datos conversacionales muestra que una explicación comprensiva de la suspensión sintáctica requiere de una re-evaluación de este fenómeno en el contexto de los procesos metacognitivos asociados a la conducta verbal. Se proponen y comentan cinco tipos generales de procedimientos y contextos para las construcciones sintácticas suspendidas. Estos cinco tipos de situación implican diferencialmente procesos metacognitivos como la anticipación y prevención de errores previsibles, el control intersemiótico de la producción de lenguaje y la comunicación mediante el uso de gestos, aspectos motivacionales e intencionales asociados con el uso del lenguaje, las tareas colaborativas en la producción lingüística y la teoría de la mente.

*Key words:* Afasia; Análisis conversacional; Funciones ejecutivas; Habilidades metalingüísticas; Sintaxis.

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## Introduction

People with aphasia exemplify to different degrees how impairment in producing or understanding language is compatible with an apparently intact pragmatic knowledge. The capacity to appreciate the sense of the act of communication is normally preserved even in cases of a radical impoverishment of verbal resources, as in the well-known case commented on by Goodwin (1995, 2000). Goodwin reported the case of a 65-year-old aphasic man who was capable of maintaining conversational interaction with only three words at his disposal: *yes, no, and*. Within the context, in this case, of a relatively well preserved linguistic comprehension and the capacity to modulate the intonation of the words *yes, no, and*, as well as the intervention of other semiotic co-factors including the co-constructive activity of interlocutors, the variety of conversational contributions from this individual was truly outstanding and unexpected. Although the case referred to by Goodwin represents an extreme situation, knowing ‘how to do things with words’ –to recall Austin (1960)– is something present, as a general rule, in people with aphasia. Let us now consider here this pragmatic knowledge as a metacognitive dimension of verbal behaviour deserving attention for both assessment and therapeutic purposes.

Obviously, the preservation of this basic knowledge about the sense of a communicative action does not mean the preservation of specific pragmatic abilities, i.e. abilities involved in the control of language use in particular contexts. People with aphasia manifest limitations in the kind of contexts or situations of language use in which they may become involved. It is commonly observed, for example, that people with aphasia avoid answering the phone, or try to escape from playing the role of a

messenger. It is clear that these limitations of a pragmatic nature cannot be considered to be independent of specific linguistic impairments. Playing, for example, the pragmatic role of a messenger entails the use of reported speech and the management, to this end, of some specific morphosyntactic or grammatical skills (such as complementisers, and mood and tense inflections). Therefore, it is not so easy to differentiate specific pragmatic abilities from linguistic abilities, as sometimes postulated. Managing the relationship between the linguistic means at our disposal (especially in the case of a severe restriction) and our capacity to explore different contexts of language use is a significant part of our implicit knowledge about semiotic resources. This knowledge, which –as mentioned– is to a great extent preserved in people with aphasia, manifests itself commonly as a withdrawal from language use or, more precisely, from specific contexts of language use. This is a very common way in which the adaptive behaviour of people with aphasia can be observed (Kolk & Heeschen, 1990, 1992). This kind of adaptive behaviour, although more clearly observed in non-fluent cases, is also present in fluent aphasic speakers.

After examining, for example, uses of the Spanish and Catalan connector *que* in conversational settings, Hernández-Sacristán and Rosell-Clari (2009) conclude that no strict agrammatical uses of this connector are observed in either fluent or non-fluent aphasic speakers, as shown in *Corpus PerLA*, where conversational interactions of Spanish or bilingual Spanish-Catalan aphasic speakers are recorded (Gallardo-Paúls & Sanmartín-Sáez, 2005; Gallardo-Paúls & Moreno-Campos, 2005; Hernández-Sacristán, Serra-Alegre & Veyrat-Rigat, 2008). People with aphasia demonstrate the ability to circumvent grammatical mistakes by avoiding particular contexts for the use of the *que* connector. In fact, a restriction in the use of the different categorical types (and their corresponding contexts) of this connector characterises people with aphasia, although this restriction –according to Hernández-Sacristán and Rosell-Clari (2009)– is statistically meaningful only for non-fluent aphasic speakers when compared with normal (i.e. non-neurologically damaged) speakers. This restriction is not performed in a haphazard way, but is guided by a functional ‘proximal-distal’ gradient (Hernández-Sacristán, Rosell-Clari & MacDonald, 2011), taking us from a ‘proximal’ or situation-anchored use of language to a ‘distal’ or situation-independent use of language.

Morphosyntactic resources are in greater demand when moving from proximal to distal use. People with aphasia, by assuming (although not necessarily in a conscious way) their linguistic impairment, avoid the more demanding distal contexts, but maintain the less demanding proximal ones.

These observations, and a large amount of research in this direction, as reported by Dick, Bates, Wulfeck, Utman, Dronkers and Gernsbacher (2001), confirm the point of view that people with aphasia “still know their grammar” (in the words of Dick et al., 2001). We are referring here to a ‘vestigial’ knowledge that can manifest itself as avoidance in the use of specific grammatical elements. Our data reveal that people with aphasia retain to some extent the capacity to steer linguistic production and communicative resources in a way that minimises possible agrammatical uses by avoiding formal complexities and the communicative situations in which these complexities can be expected. In fact, people with aphasia exemplify a paradoxical expression of our general knowledge about actions, and particularly about language and communication: i.e. in the same way as the avoidance of an action can reveal some knowledge about the nature of this action, withdrawing from the use of language can reveal some knowledge about language.

### **Executive function of inhibition and suspended syntactic constructions**

Let us now consider a specific manifestation of a withdrawal in language use revealing –paradoxically– knowledge about language. Withdrawal in language use can be viewed as a particular effect of the executive function of inhibition. In this way, we are bringing language into the realm of metacognitive processes, in whose development language itself has a very meaningful role to play (Ardila, 2008). In our view, and also according to Bickerton’s (1990) reflections from an evolutionary perspective, specificity of human behaviour in fact entails the procedural capability of either speaking or keeping silent in a particular context. The basic executive function of inhibition (Barkley, 1997, 2001) and the complex of psychological processes associated with it (which include monitoring, planning, perception, as well as motivational and emotional factors) are crucial in defining the specificity of human language. In our view, the unique character of human language must be sought not only by considering

particular formal properties of language, but also by considering the specific way humans use language. In other words, specificity of language must be sought not only within the domain of syntax, but also –and probably in a more meaningful way– within the domain of pragmatics (Hernández-Sacristán, 2006; Hernández-Sacristán, Rosell-Clari, Serra-Alegre & Quiles-Climent 2012; Gallardo Paúls & Hernández Sacristán, 2013). The metacognitive capability of either speaking or keeping silent explains the development of the symbolic dimension of language. The capacity to inhibit linguistic use in fact gives language its basic ‘laminated’ structure referred to by Goodwin (2013). Not only does being silent acquire meaningfulness in this context, but also the very act of saying something involves a connotation. To round out our position, capturing the specificity of human language entails explaining language in its double role of both object and instrument of metacognitive processes (Cf. Hernández-Sacristán, Rosell-Clari & Serra-Alegre, 2014).

Preserved linguistic skills in people with aphasia can be assessed by considering their connection with metacognitive activity surrounding verbal behaviour. Our aim in this paper will be to exemplify this general assumption by considering the particular case of suspended syntactic constructions, understood as an effect of the executive function of inhibition and related metacognitive processes. One of the uses of the *que* form examined in the aforementioned study by Hernández-Sacristán and Rosell-Clari (2009) has been characterised as a suspended use, i.e. the case in which, immediately after introducing a *que* form, the speaker interrupts syntactic construction. This supposedly enables the speaker to avoid a foreseeable grammatical mistake. We are thinking here more of a preconscious (procedural) strategy than of a conscious (declarative) one. Aphasia will allow us to visualize in an extreme context the otherwise common ability for syntactic suspension.

Avoidance of language use is manifested here not as a restriction in the range of constructional options selected by the speaker, but as the interruption of an already initiated construction. The situation can probably be described in this way: the speaker has failed in avoiding a particular type of use. He/She has therefore failed in the paradigmatic or selection axis, but still has the opportunity to withdraw language use by not completing the initiated construction, i.e. a withdrawal in the syntagmatic axis.

We will focus on this particular dimension of inhibition associated with language production, as manifested by people with aphasia. Additionally, we will also consider how people with aphasia, by putting into play a metacognitive activity, are to some extent capable of managing language use by transforming linguistic impairments into discourse and conversational values: linguistic impairment can be re-evaluated as a trigger for cooperative conversational activity. We will present below a clear example of Goodwin's (2013) proposal on the "co-operative, transformative organisation of human action and knowledge". The objective of this paper will be, in effect, to illustrate, by analysing the conversational uses of people with aphasia, how a preserved general sense about language use and communication (in fact, a preserved general pragmatic knowledge) manifests itself by 'making a virtue out of necessity'.

Before describing the basic steps in this transformational process, let us introduce a prior complementary reflection about the relevance of data based on conversational interaction when assessing aphasia from the point of view of metacognitive processes involved in managing linguistic impairment. It is obvious that the strategic component associated with language use cannot be captured when examining the linguistic behaviour of people with aphasia in conventional experimental settings. In these settings, verbal behaviour is elicited from individuals with few or no opportunities for choosing between different constructional options, including here the option of avoiding particular uses or suspending syntactic constructions in specific contexts. The conventional experimental setting tries to isolate linguistic behaviour as if it were independent from the speaker-hearer's experience and the general context of linguistic use. Thus, the metacognitive factors surrounding verbal behaviour are normally overlooked, perhaps because they are inoperative in this kind of setting.

On the other hand, a conversational setting constitutes a suitable and appropriate space for the deployment of executive functions associated with verbal behaviour (Cf. Frankel & Penn, 2007; Frankel, Penn & Ormond-Brown, 2007; Penn, Frankel, Watermeyer & Russell, 2010). To be more exact, the functionality of metacognitive factors can only be captured, in our view, by giving attention to the conversational use of language. In the final analysis, transforming our semiotic means

into both object and instrument of metacognitive processes requires the perspective of an individual and of a social image involved in conversation.

### **Participants and conversational events**

To illustrate the technique of syntactic suspension let us examine 6 conversational events where Spanish aphasic speakers, with differing aetiology, interact in conversation with family members and/or members of our research team. Conversations are thematically open, although circumstances of brain injury and its consequences are normally recurrent subjects. The conversational events mentioned are included in the *Corpus PerLA (Perception, Language, and Aphasia)* (Gallardo-Paúls & Sanmartín-Sáez, 2005; Gallardo-Paúls & Moreno-Campos, 2005; Hernández-Sacristán, Serra-Alegre & Veyrat-Rigat, 2008). The transcripts of the 6 conversational events specifically selected for our research have been published in Hernández-Sacristán, Serra-Alegre and Veyrat-Rigat (2008), a volume of the *PerLA* corpus dedicated to mixed cases of aphasia. The aphasic speakers participating in these conversational events in fact demonstrate different degrees of fluency. This variability in fluency may be considered of interest for capturing a relevant range of situations representative of different types of syntactic suspension performed by people with aphasia, but also by normals in conversational interaction with aphasic speakers. Fluency has been considered a very significant factor in explaining the symptomatology of aphasia (Dick et al. 2001), and particularly when trying to explain procedural strategies of linguistic use within conversational settings (see for Spanish aphasic speakers, Moreno-Campos, 2010a, 2010b). Fluency is a dimension we suppose to be crucially involved in the way syntactic suspensions can be managed or reformulated in semiotic terms. Taking into account BDAE (Goodglass & Kaplan, 1983) criteria and, in particular, previous treatment of Spanish conversational data (Hernández-Sacristán & Rosell-Clari, 2009), we assume, when characterising fluency, that a words-per-turn average of less than or equal to 4 identifies a non-fluent case, and that a words-per-turn average of more than 4 identifies a fluent case. However, according to Moreno-Campos and Gallardo-Paúls (2013), 7.3 words-per-turn can be established as a cut-off point for fluency in Spanish conversation. Obviously, the fluent / non-fluent contrast

admits a transitional domain, but it is not the aim of this paper to establish the limits of this domain. In our sample, we examine two clear non-fluent cases, two clear fluent cases and two borderline or transitional cases. Different degrees of severity, also according to BDAE, are represented in this sample as well. Table 1 contains a basic characterisation of the aphasic individuals under examination.

**Table 1. Speakers with aphasia**

<b>Aphasic speakers</b>	<b>Sex (Age)</b>	<b>Severity BDAE</b>	<b>Words per turn</b>	<b>Aetiology</b>
<b>JCT</b>	Male (70)	0	1.34	Left middle cerebral artery infarction. Hemiplegia (stroke 3 years ago).
<b>JMM</b>	Male (58)	1	3.94	Left sylvian ischemic ictus (stroke 2 years ago).
<b>AHB</b>	Male (69)	1	4.91	Left temporal occipital ischemic infarct. Also thalamic infarct (stroke 2 months ago).
<b>EDE</b>	female (22)	2	6.01	Left parietal lobe intraparenchymal haemorrhage (stroke 3 years ago).
<b>FCJ</b>	Male (68)	2	16.03	Left sylvian ischemic ictus, due to left carotid thrombosis (stroke 2 years ago).
<b>POJ</b>	Female (73)	3	19.8	Left frontal cerebral haematoma (stroke 4 years ago).

In table 2, we also specify basic aspects characterising the corresponding 6 conversational events. PPT (Percentage of Participation in Turns) and PPW (Percentage of Participation in Words) represent, respectively, the percentages of conversational turns or words produced by the aphasic speaker during the conversational event.

After defining with these criteria a sample that we suppose representative of situations of linguistic use by aphasic speakers, the conversational outputs have been explored with the aim of, first, identifying tokens of syntactic suspension and, later, differentiating types of suspension, which can be considered relevant for explaining a metacognitive control of language use. The ethnographic exploration of the conversational outputs has been performed independently by the two co-authors of this study. Frequency of tokens of suspension has a secondary role as a variable,



because our main focus here is in establishing types representative of metacognitive activity.

**Table 2. Conversational events**

<b>Aphasic speaker</b>	<b>Turns</b>	<b>PPT</b>	<b>Words</b>	<b>PPW</b>	<b>Participants</b>
<b>JCT</b>	102	21%	137	3%	I: Informant (JCT) M: wife (65) E1: interviewer (man, 45) E2: interviewer (woman, 53)
<b>JMM</b>	347	34%	1369	24%	I: Informant (JMM) M: wife (54) H: son (28) E1: interviewer (woman, 44) E2: interviewer (man, 37)
<b>AHB</b>	284	33%	1395	25%	I: Informant (AHB) E1: interviewer (man 37) E2: interviewer (woman, 53) M: wife (65)
<b>EDE</b>	238	30%	1431	20%	I: Informant (EDE) M: mother (48) P: father (53) H: brother (12) E1: interviewer (woman, 54) E2: interviewer (man, 47) E3: interviewer (man, 47)
<b>FCJ</b>	269	38%	4311	50%	I: Informant (FCJ) M: wife (63) E1: interviewer (woman, 46) E2: interviewer (man, 46)
<b>POJ</b>	221	45%	4375	75%	I: Informant (POJ) E1: interviewer (woman, 53) E2: interviewer (man, 45)

### **Results: general considerations**

Our data show that suspended syntactic constructions constitute a very common phenomenon in colloquial conversational syntax. The technique of syntactic suspension can be observed in normal speakers, revealing that here we are dealing with something more than the result of a failure in the cognitive mechanisms of linguistic production, and that suspensions play a significant role within the discursive resources of linguistic production (Cf. for precedent studies in Spanish colloquial use, Narbona, 1989; Herrero, 1997; Pérez-Giménez, 2004). The technique of syntactic suspension acquires, however, a particular value within the context of aphasic

linguistic production. Although anomia (difficulties in accessing words) and working memory deficits can explain, to some extent, the phenomenon of syntactic suspensions, people with aphasia normally retain the capacity of also appreciating the discursive value of suspension. Inspection of the data permits us to draw conclusions about the existence of five general situations, which will be commented on in the next section, differentially affecting executive functions surrounding verbal behaviour.

As previously said, suspended syntactic constructions can in fact be re-evaluated as a particular linguistic manifestation of the general executive function of inhibition, with its associated attentional and monitoring effects on verbal behaviour. Suspension entails an action prompting a re-conduction and selection of linguistic means. In any case, we have here something more than a mere repair mechanism (Milroy & Perkins, 1992) in the sense that in conversations people with aphasia (as is also the case with normal speakers) do not usually revert to substituting mistakes by correct expressions (although this can also be observed), but move on, in most cases, by reorienting linguistic formulation. As expected, in face-to-face interaction linguistic mistakes detected prompt paraphrastic activity more than literal repair activity. Paraphrasing is a kind of natural metalinguistic activity. By following the proposal by Hernández-Sacristán et al. 2012, natural metalanguage represents the cognitive domain where verbal behaviour and executive functioning blend or interact (for a similar view on the relationships between metalinguistic activity and executive functioning, see Harley, Jessiman, MacAndrew & Astell, 2008). Together with paraphrastic activity, other metacognitive techniques applied to verbal behaviour (i.e. different manifestations of natural metalinguistic activity) are involved here, as we will try to illustrate. By assuming the central and pivotal nature of inhibition, our interest in the following is only an ethnographic, descriptive one, aimed at offering a basic characterisation of management procedures associated with suspended syntactic constructions (Cf. also Hernández-Sacristán & Serra-Alegre, 2008).

## **Results**

When analysing our Spanish aphasic speakers' conversational outputs and their conversational partners' contributions, five general types of suspended syntactic

constructions can be postulated. They can be described as follows by selecting some paradigmatic conversational exchanges.

*Suspensions with re-startings and maintaining turns*

In conversational practice, suspensions usually count as proximal solutions for intended distal objectives. People with aphasia are in many cases able to conceive larger or more integrated syntactic constructions, required in some specific (distal) communicative situations, but they are also normally aware of the difficulties they have in producing these constructions themselves. Suspensions are sometimes used to offer fragmentary outputs that in stages approach an intended complex structure. In this way, difficulties of syntactic production are circumvented and foreseeable grammatical mistakes are avoided. The metacognitive (i.e. metalinguistic) technique of paraphrasing is clearly involved here. We postulate, in fact, that the primary oral manifestation of paraphrasing activity can be described as speaking around an intended complex structure, approaching it by stages. Re-starts are the primary manifestations of our capacity to reformulate expression. In a more general sense, paraphrasing is a natural technique with the function of readjusting linguistic outputs to reduce the gap that always exists between our linguistic production and understanding capacities. This gap can be especially amplified in people with aphasia.

Re-starts also have the additional function of maintaining the conversational turn, and therefore preserving social image. We can illustrate this case with the following example, representing a clear scaffolding (proximal) strategy for achieving an intended complex structure. POJ is a 73-year-old woman who suffered a left frontal cerebral haematoma 4 years ago. She has shown a turn length average of 19.8 words within the transcribed conversation, and so represents a clearly fluent case. She is trying in this example to communicate her date of birth to the interlocutors (here and in the following examples we have tried to approach a colloquial English version of the original Spanish text: see transcription conventions in Appendix I):

091 POJ:    §yy cumplo/ pues nació/// el día→ ehh/ el díaa ss→/ nació en el treinta// en-eh/  
          en el treinta/// el día seis de enero de mil novecientos treinta§

- 091 POJ: §and-and my birthday/ well I was born/// on the → ehh/ on the ss→/ I was born in the thirties// in-eh/ nineteen thirty/// I was born on the sixth of January, nineteen thirty§

The next example, also from POJ, clearly illustrates how suspensions with syntactic replannings are probably due to the mental anticipation of specific anomic situations, which the aphasic speaker tries to circumvent. Remaining paraphrastic abilities are put into play for this effect:

- 018 POJ: mi hijo trabaja en→ hizo el- el→ la carrera de ingeniero industrial/ y está en naa/ está en Barcelona/ el jefe/ y la empresa/ pero aquí tienen/ en Valencia/ en no sé qué calle// no sé qué calle/ está enn→ aquí/ con otroo señor y tienen/ son/ muchoos chicos/ de la misma pandilla dee mi hijo (...)

- 018 POJ: my son works at→ studied as a -a → an industrial engineer/ and he's in naa/ he's in Barcelona/ the boss/ and the company/ but they have here/ in Valencia/ I don't know in what street// I don't know what street/ it's inn→ here/ with anotheer man and they have/ there are/ a loot of lads/ they're all friends oof my son (...)

### *Suspensions as collaboration triggers*

Suspensions of syntactic constructions can also frequently call for the interlocutor's contributions. Suspended syntactic constructions can be re-assessed in this way as an aspect of negotiated collaborative linguistic practice (Bloch & Beeke, 2008; Oelschlaeger & Damico, 1998). Constructional collaboration should be considered as a more embracing conversational phenomenon that goes beyond the joint construction of syntax (Helasvuoto, 2004), and that plays a significant function for the management of turn-transition (Lerner, 1991; Antaki, Díaz & Collins, 1996). But our focus here is the particular situation in which an asymmetry in the morpho-syntactic resources is observed between conversational partners, i.e. aphasic and normal (non brain injured) speakers. When an intended distal construction appears as an unreachable objective, people with aphasia avoid foreseeable mistakes and/or conversational gaps by appealing to the interlocutor's aid, which obviously entails turn changes and co-construction of syntax. We find here also a very common procedure in developing

syntactic abilities by children (in conversational interaction with adults or slightly older peers), i.e. a clearly proximal, joint problem-solving strategy in Vygotsky's (1978) terms. Let us illustrate this case with the following example: JMM is a 58-year-old man who suffered a left sylvian ischemic ictus 2 years ago. He has shown a turn length average of 3.94 words, and so represents a non-fluent case.

- 041 E1: ¿se olvidó de— de su trabajo y de lo que hacía/ se olvidó de su profesión/ ¿lo que hacía?
- 042 JMM: bueno/ sí/ sí// parte (SE LLEVA LA MANO A LA CABEZA)/ pero no/ eso no/ ¿no? (⇒ H)/ eso (...)
- 043 H: eso/ vamos que no sabías decirlo
- 041 E1: have you forgotten what-what your job was and what you did?/ have you forgotten your job?/ what you did?
- 042 JMM: well/ yeah/ yeah// some (HE PUTS HIS HAND TO HIS HEAD)/ but not/ not that/ right? (⇒ H)/ that (...)
- 043 H: right/ so you didn't know how to say it

JMM is trying to express that he has forgotten the name of his profession and, after some fragmentary approaches, he now looks to his son H (see transcript convention ⇒ H) for help and finishes his turn with a suspended construction. The active role assumed by the speaker when suspending a syntactic construction in this particular case can be corroborated by the commonly associated presence of phonic and kinesic gesturing or of proxemic factors such as gaze (directed in this case by JMM to his son H). Non-verbal semiotic procedures are normally at work here by reinforcing the metacognitive, i.e. executive, control of verbal behaviour.

Syntactic suspension can in fact be normally associated with substitution of verbal expression through gesturing, an intersemiotic code-switching by which the aphasic speaker provides an alternative to his/her verbal production difficulties. In the following example, FCJ initiates a syntactic construction with the idea of narrating a past event very significant to him. He probably perceives difficulties in completing the expression by verbal means and, after two formally suspended constructions, he tries to clarify things with gestures (see turn 481). FCJ is a 68-year-old man who, 2 years

ago, suffered left sylvian ischemic ictus, due to left carotid thrombosis. He has shown a turn length average of 16.03, therefore representing a clearly fluent case. FCJ is very active in his conversational contributions, although these require the interpretative intervention of his wife, partially due to frequent paraphasias and problems with the thematic structure. In the following passage, FCJ's wife translates his gesturing verbally (see turn 482). After being helped in this way, together with a brief intervention from E2 (which is in fact also a suspended construction), FCJ completes the information with a piece of referred dialogue that combines his own intervention (in Catalan) with the intervention of his conversational partner (in Spanish) (see turn 484).

481 FCJ: es que/ lo que yo muchas veces me acordaba// ((como)) yo ya había termina(d)o de trabajar (GESTO SERIO, ⇒E1 QUE SE RÍE, ILTR DE PAGAR GOLPEANDO UNA MANO SOBRE LA OTRA)

482 M: es que le quedaba (xxx) medio millón de pesetas

483 E2: ¡ah! pues/ [eso no es→]

484 FCJ: *[els diners què passa]/ que no n'hi ha de pagar/ que no n'hi ha o què// ya te pagaré/ ya te ((lo diré))/ ya te cuan- cuando me acuerde/ te lo diré/ poco a poco/ pasaron/ un años/ pasaron→// mil años (RISAS)/ chst chst/ mil↑ más más han venido (⇒M) más*

485 M: ((han pasa(d)o dos años))

486 FCJ: dos añ-

481 FCJ: the thing is/ what I often remembered// ((as)) I had already finished working (GESTURE INDICATING SERIOUSNESS, ⇒E1 SMILING, ILLUSTRATIVE GESTURE OF PAYING: SMACKING ONE HAND ON THE OTHER)

482 M: the fact is they owe him (xxx) half a million pesetas

483 E2: Ah! well/ [that's not→]

484 FCJ: *[what about the money]/ there's no need to pay/ there's no money, or what?// I'll pay you soon/ I'll ((tell you))/ I'll when- when I remember / I'll tell you / little by little / I waited/ a years/ I waited→// a thousand years (LAUGHING)/ tut, tut/ a thousand↑more more have gone by (⇒M) more*

485 M: ((two years have passed))

486 FCJ: two ye-

We see a similar solution in the following passage from EDE. EDE is a 22-year-old woman who, 3 years ago, suffered a left parietal lobe intraparenchymal haemorrhage. She has shown a turn length average of 6.01, thus representing a transitional case in conversational fluency. In turn 326, EDE ends her verbal contribution with a conventional formal suspension: “lo que pasa es que” (“the thing is”). Suspension is reinforced with a gesture of indefinite meaning requiring interpretation by conversational partners (which is also probably asked for by EDE).

- 325 E1: ¿te gusta oír música→?
- 326 EDE: sí/ mucho/// a mí me gustaba↑ mucho mucho eeh la música y bailar// lo que pasa es que (MENE LA CABEZA DE ARRIBA ABAJO)
- 327 E1: ahora no puedes→
- 328 EDE: Sí
- 
- 325 E1: ¿do you like listening to music→?
- 326 EDE: yeah/ a lot/// I've enjoyed it↑ a lot a lot eeh music and dancing// the thing is (SHE NODS HER HEAD)
- 327 E1: now you can't→
- 328 EDE: Yeah

### *Filling in the gap by suggestion*

Let us now consider the aphasic individual in the role of an interpreter completing a suspended construction: the collaborative positions are here reversed with respect to situation 2. Comprehension of the functionality of a syntactic suspension can also be particularly observed in people with aphasia when they are assigned the conversational role of completing a sentence. Normal speakers in conversational interaction with non-fluent aphasic speakers usually suspend a syntactic construction requiring completion from the aphasic speaker, i.e. they use a prompting procedure (see in this respect the notion of ‘exam halts’ by Aaltonen & Laakso, 2010, and ‘test questions’ by Beeke, Beckley, Best, Johnson, Edwards & Maxim, 2013). This practice entails an asymmetrical relationship between interlocutors regarding linguistic competences, as showed paradigmatically in the pedagogical context (Koshik, 2002). Normal speakers, conscious of the interlocutor’s difficulties with language processing,

produce a sentence by eliminating the last position corresponding to a word or a phrase, which supposedly facilitates word retrieval by the aphasic speaker. The metalinguistic nature of this procedure is evident. The requirement of completion is also reinforced by intonation, and this requirement is usually understood by the aphasic speaker independent of his/her ability to effectively complete the syntactic gap. The following example from JMM can illustrate this gap-fill suggestion or instruction:

- 735 M: ¿cómo se llama ese mes/ el mes de→?  
736 JMM: de julio  
737 M: mar→  
738 E: enero/ febrero  
739 JMM: y marzo
- 735 M: what do we call this month?/ the month of→?  
736 JMM: July  
737 M: Mar...→  
738 E2: January/ February ...  
739 JMM: and March

The instruction of gap-filling is clearly understood by JMM. In fact, he completes the syntactic gap, although he does it with the wrong month (July instead of March). The name of the right month is finally retrieved after two additional aids are provided by the interlocutors, M and E2. As seen, these two aids are, respectively, the initial sound of the word and the preceding months in the calendar.

Another example of co-constructive activity based on gap-filling suggestions can also be found in the following passage from JMM. See conversational turns 410-411, 418-19. Note a gesture support at 415. The gap-fill suggestion contained in 420 remains unanswered:

- 408 H: ¿dónde has ido a comer?// ¿dónde has ido a comer en Navidad?/ ¿el día de Navidad/ dónde fuiste a comer?  
409 JMM: ¿en el pueblo?  
410 H: nooo/ ¿fuimos a comer a→?



- 411 JMM: ¿a Valencia?  
412 H: a Valencia/ sí/ ¿a dónde?  
413 JMM: cla(r)o  
414 H: ¿a casa de quién?  
415 JMM: ¡aaaah! sí// <sup>o</sup>(sí)<sup>o</sup>/// <sup>o</sup>(a ésa)<sup>o</sup> (SEÑALA Y MIRA A SU IZQUIERDA)  
416 H: está la foto allí/ sí  
417 E2: ¡eeeh!  
418 H: ¿a casa de los→?  
419 JMM: los amigos (ASIENTE)  
420 H: uyyy/ casi/ ¿a casa de los→?
- 408 H: where did you go to eat?// where did you go to eat at Christmas?/ on  
Christmas Day/ where did you have lunch?  
409 JMM: in the village?  
410 H: nooo/ we went to eat in→?  
411 JMM: in Valencia?  
412 H: in Valencia/ yeah/ where at?  
413 JMM: That's righ(t)  
414 H: at who's house?  
415 JMM: aaah! yeah// <sup>o</sup>(yeah)<sup>o</sup>/// <sup>o</sup>(at that one)<sup>o</sup> (HE POINTS AND LOOKS TO HIS LEFT)  
416 H: the photo's there/ yeah  
417 E2: eeeh!  
418 H: at the house of→?  
419 JMM: friends (HE AFFIRMS)  
420 H: oooh/ nearly/ at the house of→?

### *Suspensions as abandonment of turns*

Engagement, motivation and emotion are important factors to be considered here for understanding syntactic suspensions as a manifestation of underlying metacognitive processes (Consider in this context Damasio's (2004) notion of somatic markers as a component of procedural decision-making tasks). In some cases where depression is involved, we cannot discard a possible situation in which suspensions do not seem to entail a syntax-in-progress procedure, as previously described. Language production is related with emotion and motivation in a very intriguing way, including a feedback effect of language production on the emotional and motivational substrate involved in conversational practice. As for other situations, it is not easy to determine if an

emotional or motivational deficit explains abandonment of linguistic production, or if difficulties in language production cause emotional or motivational deficit. A kind of causal circularity between emotion-motivation and language use can be observed here. This is exemplified in the case of AHB. AHB is a 69-year-old man who suffered a left temporal occipital ischemic infarct and also thalamic infarct two months ago. He has a turn length average of 4.91 words, and so represents a borderline case between fluency and non-fluency (it was treated as a fluent case under the criteria established by Hernández-Sacristán & Rosell-Clari, 2009). On many occasions, AHB neither re-starts construction after suspension nor contributes with phonic or kinesic gesturing to clearly instigate collaboration from interlocutors. The construction remains incomplete and what is observed is only the abandonment of the topic and /or the conversational turn. See the following passage illustrating this situation (particular attention should be given to the gesturing of AHB (I)):

- 010 AHB: ((solo pienso en dormir))// igual que antes// y me pongo a hablar yyy→  
(ENCOGIMIENTO DE HOMBROS)
- 011 M: y no le salen las palabras
- 012 E: (⇒I) ¿y→?
- 013 AHB: ya noo/ no ((me siento bien)) ((xxx xxx xxx)) (LLEVA SU MANO A LA BOCA)
- 014 E: no encuentra las palabras↑ para hablar
- 015 AHB: Claro
- 
- 010 AHB: ((I only want to sleep))// the same as before// and I start speaking aaand...→  
(SHOULDER-SHRUGGING)
- 011 M and the words just don't come out
- 012 E2: (⇒I) and...→?
- 013 AHB: Now I doon't / don't ((feel well)) ((xxx xxx xxx)) (PUTS HIS HAND TO HIS MOUTH)
- 014 E2: You can't find the words↑ to speak
- 015 AHB: Exactly

A more extreme case exemplifying this kind of situation can be observed in JCT. JCT is a 70-year-old man who, 3 years ago, suffered a left middle cerebral artery infarction, causing hemiplegia. He has shown a turn length average of 1.34 words, therefore representing a clearly non-fluent case. Verbal contributions from this

individual are very poor, basically consisting of monosyllabic expressions and verbal stereotypia. See turn 370 in the following passages:

- 368 E2: pero por lo general la comprensión la tiene buena  
369 M: sí sí// y además de que vinimos cuando vinimos del hospital de allá de– del Clínico y nos mandaron// allá al Doctor Moliner// al venir a casa y ver las chiquillas y todo se le notó bastante mejoría→  
370 JCT: (( \*(sí pero)\* ))  
371 E2: dígale señor José/ dígale un piropo a su mujer  
372 M: (RISAS)  
373 JCT: (RISAS)  
374 E2: dígale un piropo  
375 JCT: no di di
- 368 E2: but in general his understanding is good  
369 M: yeah yeah// and as well as that when we went from the hospital, from – from the Clinic and they sent us to Doctor Moliner// when we got home and he saw the kids and all he seemed quite better→  
370 JCT: (( \*(yeah but)\* ))  
371 E2: José, tell your wife/ tell her what a beauty she is  
372 M: (LAUGHING)  
373 JCT: (LAUGHING)  
374 E2: tell her she’s a cracker  
375 JCT: not tell tell

Even in these cases, the specific point of suspension does not occur by chance from a syntactic perspective. As for code-switching, there are more or less acceptable points for interruption, and the aphasic speaker is usually aware of these preferential points. As a consequence, suspended constructions rarely generate agrammatical outputs: partial constructions are normally not bad constructions. Natural syntactic ability includes knowing where the preferential breaking points of a sentence are. In the more extreme situations, suspended syntactic constructions demonstrate the way people with aphasia “still know their grammar”, as Dick et al. (2001) put it.



phonic gesturing usually reinforces the discursive value of suspension. The following example from JMM clearly illustrates this situation:

019 E1: muy bien// ¿pero no sabe cuántos años tiene?

020 JMM: no (NIEGA CON LA CABEZA)

021 E1: ¡ay qué presumido es!

022 JMM: no/ no// (se ríe<sup>R</sup>) esta chica→

019 E1: Very good// but don't you know how old you are?

020 JMM: No (SHAKING HIS HEAD)

021 E1: Oh, how vain you are!

022 JMM: No/ no// (he smiles<sup>R</sup>) This girl→

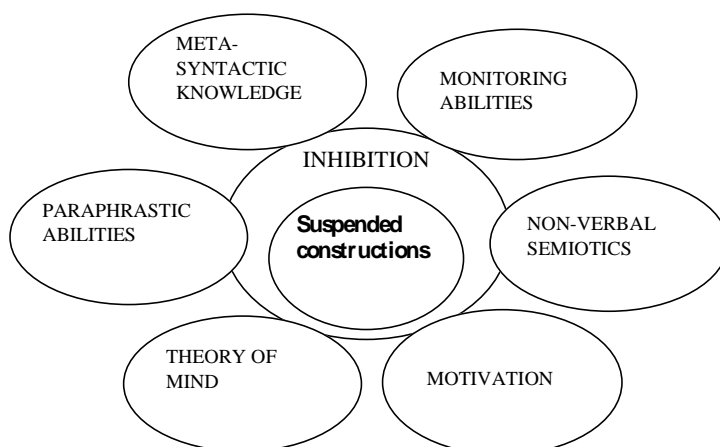
This latter situation, in which a discursive value is assigned to syntactic suspension itself, closes the circle of functional effects we are considering here.

## Discussion

Our observations enable us to establish the functional and discursive context explaining suspensions of syntactic constructions by aphasic speakers. We have considered only particular examples of the pragmatic conditions determining syntactic productions, i.e. of the variability of syntax depending on the task performed (Hernández-Sacristán, Rosell-Clari & MacDonald, 2011; Sahraoui & Nespoulous, 2012). From this point of view, it is possible to say that syntactic suspensions can in many cases be described, not as reductions of syntax, but as a *syntax-in-progress* procedure, as a technique by which a link can be established between verbal behaviour and metacognitive processes.

Suspended syntactic constructions can be taken as clear examples of how metacognitive processes associated with executive functioning are commonly involved in the conversational use of language. When considering verbal behaviour as commonly elicited in clinical experimental situations, this involvement can easily be overlooked. However, a comprehensive assessment of aphasia requires –in our view– consideration of linguistic behaviour in its relationship with metacognitive processes. In Barkley's model of executive functioning (Barkley, 1997, 2001), inhibition appears in

a prime position as a metacognitive process that permits a purposeful reprogramming of behaviour by avoiding prepotent responses or by controlling interferences. A deficit in the executive function of inhibition is typically associated with perseverations in aphasia. But syntactic suspensions exemplify just the opposite situation: i.e. the way inhibition is strategically involved in language use. Obviously, constructional suspensions are better observed in conversational practices than when eliciting language in a controlled way. Conversation stimulates the metacognitive control of verbal behaviour. Constructional suspensions constitute a particular and significant manifestation of this kind of control. In conclusion, we can refer to constructional suspension as a natural metalinguistic technique: a technique in which language counts as an object and/or an instrument involved in metacognitive processes. From a therapeutic perspective, the interest in conversation-based intervention can be justly based on the fact that in natural conversational practices a multiplicity of factors requiring metacognitive control over verbal behaviour can be employed and worked on (Cf. Frankel, Penn & Ormond-Brown, 2007: 816). Moreover, the conversational context permits the active involvement of the individual in his/her own therapy. The metacognitive domain associated with suspended syntactic constructions can be depicted as follows in Figure 1:



**Figure 1: Suspended constructions and metacognitive factors**

Suspended constructions are a particular manifestation of the executive function of inhibition when applied to verbal behaviour. But inhibition in this case represents the metacognitive function linking our ability to suspend syntactic

constructions with a complex of natural metalinguistic abilities that can be summarized as follows:

*Monitoring abilities:* Suspensions imply a capacity for establishing a psychological distance between language and the language user, by which the speaker can both check ongoing syntactic production and anticipate and avoid any problems in the immediately forthcoming structural slots.

*Non-verbal semiotics:* Suspensions are in many cases associated with phonic or kinesic gesturing. They exemplify the ability to complement verbal behaviour with concurrent semiotic procedures, or to compensate verbal deficit with non-verbal strategies. Control over concurrent semiotic procedures can be considered a specific metacognitive factor affecting the speaker's subjectivity and idiosyncrasy.

*Motivation:* Inhibition is sometimes clearly associated with a lack of motivation to communicate. This association manifests semiotic circularity: suspended constructions are the effects of a lack of motivation, but at the same time they can symbolise a lack of motivation. More specifically, suspension can symbolise a particular cost / benefit balance in linguistic production: the meanings to be transmitted are perhaps not important or relevant enough to justify an additional effort in completing the syntactic expression. A cost / benefit balance obviously has a special meaning for people with aphasia, but it is important here to recognize at least their capacity for evaluating this kind of balance.

*Theory of Mind:* Theory of Mind phenomena are specifically involved when suspensions are functioning as inference triggers, but a Theory of Mind perspective is also to some extent required to sustain cooperative or co-constructional activity induced, as has been said, by suspensions. In any case, Theory of Mind perspective is pervasive for all kinds of conversational phenomena and suspended syntactic suspensions are, as we know, paradigmatically dependent on conversational interaction.

*Paraphrastic abilities:* The particular association with rephrasing permits us to establish a conceptual link between suspension and this well-known metalinguistic ability of saying something in other words.

*Meta-syntactic knowledge*: As for code-switching, syntactic suspensions cannot be considered alien to a strictly formal syntactic perspective. Suspensions are closely related to our capacity to recognize syntactic slots as potentially vacant positions. Some cooperative, co-constructive tasks are especially indicative of this kind of knowledge.

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**Appendix I:**Transcription conventions of *Corpus PerLA*

Notation	Meaning
001	Turn number
E:	Interlocutor identified as "E"
§	Immediate contribution of interlocutor without pause or overlap
=	Turn maintenance after conversational overlap
[	Place where overlap starts
]	Place where overlap finishes
/	Brief pause, less than ½ sec.
//	Medium pause, between ½ sec. and 1 sec.
///	Long pause, 1 sec. or longer
(5.0)	Very long and meaningful pause (e.g. 5 sec.)
–	Long hyphen indicating pause within the turn, due to restartings, reformulations or self-interruptions
→	Suspended intonation
↑	Rising intonation
↓	Falling intonation
¿?	Common orthographic use of question and exclamation marks
i!	
°( )°	Low intensity voice, whispering, or speaking to oneself
CAPITALS	High intensity voice
*( )*	Anomalous pronunciation: hesitant, laboured, distorted (if necessary, specify additional information in footnote)
h(ow)ever	Reconstruction of non-pronounced fragments
meee	Vowel lengthening (two or three vowels in notation)
h	Aspirations
t'w said (it was said)	Elisions (due to pronunciation speed)
<b>ve ry / em pha tic / pro noun cia tion</b>	Bold type with syllabic separation indicates that the speaker takes special care over pronunciation, by emphasizing each syllable
I told him : <i>write this</i>	Italics indicate reported speech in direct style, quotations or metalinguistic uses
(( ))	Undecipherable fragments
(xxx xxx)	Undecipherable fragment of apparently two words
((the doctor))	Doubtful transcription: the exact words are uncertain
(TOUCHES THE FOREHEAD)	Small capitals in parentheses describe gestures and non-verbal elements clarifying an intervention
(SMILING <sup>R</sup> )	R in superscript indicates repetition of the gesture
(⇒E)	Speaker is looking towards interlocutor E
↑↓↔	Direction of a particular movement; for example 'arm moves down' (Arm↓)