

(Re-)assessing the status of Second Occurrence Focus in information structure: Evidence from phonological processing and micropragmatic perspectives

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Second Occurrence Focus has traditionally been characterized as a focus unit resuming a previous focal unit in the linguistic context. Despite its intonationally flat contour, the focality of Second Occurrence Focus has been associated with non-tonal parameters such as duration and intensity. Discussing phonological, processing and micropragmatic evidence, it is suggested that the behavior of Second Occurrence Focus hardly resembles that of typical (narrow) foci since (a) it shows an intonation contour which is more akin to that of non-focal constituents, (b) it can associate with focus-sensitive adverbs in non-focal contexts as well, and, (c) similarly to non-focused elements, its truth value is resistant to variations involving the illocutionary force of the sentence or other evidential or epistemic meanings. The view suggested in the paper is thus to recast the status of Second Occurrence Focus as a ‘backgrounded’ information unit.

KEYWORDS: information structure, Second Occurrence Focus, focus-sensitive operators, sentence processing, background.

1. Introduction

This paper tackles the phenomenon of Second Occurrence Focus (SOF). In earlier and recent contention, a SOF has been outlined as a contextually-given focus preceded by a focus-sensitive operator. Partee (1999) originally inquired the status of SOF discussing examples like (1):

- (1) a. *Everyone already knew that Mary only eats [vegetables]*
 b. *If even PAUL knew that Mary only eats [vegetables]_{SOF}, then he should have suggested a different restaurant*

in which the SOF unit is represented by the second occurrence of *vegetables* in (1b).

Recent works aimed at defining the nature of SOF in information structure theory have inquired its micropragmatic behavior on both theory-driven and empirically-driven bases. In the present paper, these approaches will be addressed with the view to recasting SOF as an

instantiation of a phenomenon other than focality. Due to its post-focal position in the sentence, I have decided not to commit to a *tout court* redefinition of SOF as a topical constituent. Rather, following terminological dichotomies put forth by Vallduví & Engdahl (1996), I will discuss its behavior as more akin to that of a ‘backgrounded information unit’, that is, as that part of a sentence whose function is to “anchor the sentence to the previous discourse or the hearer’s mental world” (Vallduví & Engdahl 1996: 461).

The paper is structured as follows. §2 will review the notion of focus from earlier and recent approaches and will set up a working definition for the present study. §3 will lay out the most widely debated views on SOF and will contend the relation that pitch accentuation bears to the interpretation of SOF as a (non-)focal unit. §4 describes findings from experimental approaches to focus processing which I assume might provide further grounding for speculating on the real informational status of SOF. The processing patterns described in these studies hint at a strong sensitivity of the human attentional system to accentual marking of narrow foci, which is why the lack of a dedicated pitch accent contour for SOF would render its interpretation as focus more cognitively demanding, because less expected. §5 will assess the micropragmatic role of SOF through diagnostics developed in previous works, notably illocution change tests (Lombardi Vallauri 1995).

2. Views on focality

Definitions of focus are now legion. Some stress its relation to new information (Halliday 1985), some highlight the logico-semantic relation it bears on a variable contained in the presupposition of the sentence (Chomsky 1971; Rochemont 1986), some correlate its identification with the position of primary accents in a sentence (D’Imperio 1997; Frascarelli 1999), some associate it to the presence of alternatives which are relevant for the interpretation of linguistic expressions (Rooth 1992) and some look at the way it contributes to the communicative dynamism of the discourse (Sgall *et al.* 1973; Firbas 1992). In more recent functional views, the topic-comment or focus-background distinctions have also been addressed in relation to the illocutionary goal they fulfill. This function of information units was first theorized by Cresti and her school (2000), who defined ‘comment’ as the unit conveying the illocutionary force of the utterance and fulfilling its informative goal, and the ‘topic’ as the domain to which the illocution expressed by the comment applies (Cresti & Moneglia 2010: 14).¹ It follows from this that

any changes affecting a sentence's illocution will affect the comment and not contents outside its domain (Lombardi Vallauri 1995). This behavior is clearly shown in the effects that illocution changes produce on (2) (Lombardi Vallauri 1995). Notably, in (2a-d), negation, interrogation and evidentiality modulations are considered.

- (2) [Talking to her mother]_{TOPIC}, [Jane finally felt relieved]_{FOCUS}
- a. *It is not true that*, [talking to her mother]_{TOPIC}, [Jane finally felt relieved]_{FOCUS}
 - b. *Is it true that* [talking to her mother]_{TOPIC}, [Jane finally felt relieved]_{FOCUS?}
 - c. *I don't know if*, [talking to her mother]_{TOPIC}, [Jane finally felt relieved]_{FOCUS}
 - d. *I've been told that* [talking to her mother]_{TOPIC}, [Jane finally felt relieved]_{FOCUS}

As can be noted, what is negated, interrogated, presented as doubt or reported information is not the participial dependent clause *talking to her mother*, but the main proposition *Jane finally felt relieved*, the former being topical and the second focal in the sentences. Interestingly, by postposing the dependent participial clause to the main one, the manipulations affecting the truth value of the main clause in (3) now affect that of the dependent clause, this latter having acquired a focal status in the new syntactic ordering.

- (3) [Jane finally felt relieved]_{TOPIC} [talking to her mother]_{FOCUS}
- a. *It is not true that* [Jane finally felt relieved]_{TOPIC}, [talking to her mother]_{FOCUS}
 - b. *Is it true that* [Jane finally felt relieved]_{TOPIC}, [talking to her mother]_{FOCUS?}
 - c. *I don't know if* [Jane finally felt relieved]_{TOPIC}, [talking to her mother]_{FOCUS}
 - d. *I've been told that* [Jane finally felt relieved]_{TOPIC}, [talking to her mother]_{FOCUS}

On a general basis, focus sensitivity to illocution changes can be thought to depend on the fact that if focality expresses the speaker's informative goal in his message, it is to be expected that any variation at the illocutionary level of a sentence, or involving any other epistemic or evidential meaning, will affect what the speaker intends to convey as the 'purpose' of his message (the Focus) and not what he provides as backgrounded, already shared information, which is expected to be less relevant and purposeful for the communicative task at hand, as rightfully pointed up by Lombardi Vallauri (1995).²

It must be highlighted that the strong correlation between illocutionary operators and the focus structure of a sentence is not conditional upon the syntactic position of focused constituents. The scope of such operators may include focus units whatever their extension and position in the sentence, as illustrated in (4). This point is further strengthened by the fact that any continuation of the sentences would be more likely to address (correct or challenge) the focus and not the rest of backgrounded information.

- (4) a. *It is not true that JANE felt relieved talking to her mother (it was MARY!)*
b. *Is it true that Jane felt RELIEVED talking to her mother? (Didn't she actually feel WORN OUT?)*
c. *I don't know if Jane felt relieved talking to her MOTHER (Maybe she felt relieved talking to her SISTER!)*

The interpretation one would derive from (4a) is that someone else than Jane felt relieved talking to her mother. (4b) would question whether Jane actually felt relieved or something else talking to her mother, and (4c) would express doubt on whether Jane's feeling state was due to her talking to her mother or to somebody else.

A non-negligible advantage of the illocutionary account proposed by Cresti (2000) is that it allows disentangling the given or new status of some content from its topical or focal realization in the sentence. Indeed, as also rightfully noticed by Vallduví & Engdahl (1996), what is relevant for the focus condition is its 'relational' function, that is, its capability of contrasting more dynamic and hearer-unexpected information to less dynamic and hearer-expected information in discourse. This property of focality is what Vallduví & Engdahl (1996) correlate with the level of 'information packaging' (Chafe 1976). On this account, the givenness-newness dichotomy denotes different types of information statuses compared to their external 'clothing' according to topic-comment or focus-background partitions, these latter being more strongly conditional on speakers' codifying strategies of their informative goals (Puglielli & Frascarelli 2008; Lombardi Vallauri 2009). The association of focus with less expected information, whose function is to fulfill the speaker's informative goal in the conversation and to update the common ground of the receiver, is the working definition of focus I will basically comply with in the remainder of this work.³ To account for the informational patterning SOF-sentences (as those exemplified by Partee) belong to, I will consider this notion of focus in combination with the notion of 'background' information laid out at the outset (Vallduví & Engdahl 1996), namely as a sentence unit anchoring some content to prior discourse. It is worth stressing, however, that in adopting this terminological opposition I do not mean to disregard the relevance of other outlines in describing the phenomenon of focality; this is because all levels of analysis can contribute to focus realization and focus realization may interact with a sentence's levels of analysis in different ways. On these premises, I take my working definition of focus to better fit the analytical purposes of the following discussion, yet, in so doing, I firmly believe in the intersection of this notion with other definitions put forth in the literature, which basically reflect other possible and plausible points of view on the

place of focus in the theory of information structure.

As for the interplay between packaging criteria and the given-new status of information, it is worth adding that if, on the one hand, focus realization of a content is independent from its degree of availability in discourse and recent activation in the receiver's memory, on the other, the pragmatic function of focality is different when it falls on given or new contents. For example, while the focus in (5B) can be classified as informative or presentational (Kiss 1998: 245), as it provides speaker A with information he is requesting, the focus in (6B) is visibly contrastive (or identificational, cf. Kiss 1998⁴), since it corrects a wrong assumption held by speaker A. In §5 it will be argued that if new foci can be either contrastive or presentational, given foci can only be contrastive.⁵

(5) A: *What about John?*

B: *John [is in a business meeting in Paris]FOCUS*

(6) A: *I think John and Frank are in a business meeting in Paris*

B: *No. Actually, only [FRANK]FOCUS is in a business meeting in Paris*

Despite that, focus association with new information is obviously more frequent,⁶ as the speaker's purpose in the conversation is usually to update the 'common ground' shared by both interlocutors with some new information (Stalnaker 2002)⁷ or to rectify some wrong knowledge held by the receiver.

If the relation of focus to the most purposeful information unit of a sentence is generally well accepted in the relevant literature, its connection with accentual prominence is still a matter of vivid debates. Since Selkirk (1984), several accounts have been proposed to assess the relation between pitch accent contours and focus projection. As argued by Lambrecht (1994: 297), the position of accentual peak, or also called nuclear stress, is crucial to defining the boundaries of a sentence focus.

(7) a. *Who saw Bill? – JOHN saw Bill / him*

b. *Who did Bill see? – Bill / He saw JOHN*

c. *What did Bill do? – Bill / He went straight HOME⁸*

d. *What happened? – Bill went straight HOME*

So, in the above examples, the nucleus of the focused constituents bears an accent, although the extension of focality may vary depending on the foregoing linguistic context. Lambrecht also notices that sentences with pitch-accented foci in canonical position may be interpreted as instantiating either a broad or a narrow focus since the rightmost placement of accentual prominence enables both interpretations.

There are information structures, however, in which pitch accent does not seem to be particularly devoted to marking focus units. This is the case of clitic-left dislocations in some Romance languages. As is known, these structures appear as extrapositions of topicalized constituents which are then resumed by clitic pronouns within the sentence, as exemplified in (8):

- (8) [Le camicie]_i, [le]_i ho stirate ieri
'The shirts_i, I ironed them_i yesterday'

Frascarelli (2008) noticed that speakers produce these sentences with a pitch accent marking the right boundary of the topic unit, while the comment displays a relatively flat contour. This pattern becomes particularly visible in topic-comment structures with contrastive topics (Büring 2016) which suggests that contrast can be thought to be endowed with a prosodic contour independent from that of topicalized or focalized phrases (Puglielli & Frascarelli 2008). Other recent studies have even suggested to recast the function of prominence as that of signaling the boundaries between information units, rather than the micropragmatic status they have in a sentence (Gagliardi *et al.* 2012). Nevertheless, if, on the one hand, it is not possible to nail down a one-to-one relation between focus and prosodic prominence, on the other hand, it must be pointed up that prominence still plays a relevant role in distinguishing between broad and narrow focalizations. As a matter of fact, if the VP *le ho stirate ieri* does not need to be prosodically marked to be interpreted as comment of the sentence – because the sentence context and the way it fits the communicative dynamism of discourse helps deriving this interpretation –, a focus narrowed to a single constituent could not all the way dispense with some form of accent modulation on its tonic syllable. So, in the following dialogue,

- (9) A: *Who ate all the apples?*
B: *MARY ate all the apples*

MARY features the narrow focus of B's sentence and is, for this reason, expected to be uttered with a more prominent intonational peak. By the same token, if speaker A wanted to know what Mary did with all the apples, the focus of B's sentence would eventually fall on the verb, and this latter would become the seat of the accentual prominence of the sentence, as shown in (10).

- (10) A: *What did Mary do with the apples?*
B: *Mary ATE them*

My intention to recall the relation that prosodic prominence bears on the realization of broad and narrow focalizations does not mean to be otiose, since the nature of SOF units, as they have been described in the literature, is precisely that of narrow foci. We will in fact see that this status is what makes their micropragmatic status and prosodic behavior fairly atypical.

3. The phonological view

Since Partee's first formulation of SOF (Partee 1999), interest in both the theoretical and the empirical status of this unit has rapidly grown over the last decade (Krifka 2004; Beaver *et al.* 2007; Féry & Ishihara 2009; Büring 2013; Baumann 2016), owing partly to the uncertainty of its prosodic correlates and partly to the semantic-pragmatic value of focus-sensitive operators, such as *only* or *even*, often associated with its realization in the subject literature. In a recent contribution, Baumann (2016: 483) delineates SOF as a

specific type of focus which is indicated morphosyntactically by a focus-sensitive operator (such as *only* or *even*) and which is at the same time contextually given in contrast to First Occurrence Focus which is contextually new.

He placed his definition on Partee's seminal example (Partee 1999: 215) in (11b) below in which the second mention of *vegetables* is the SOF of the sentence.

- (11) a. *Everyone already knew that Mary only eats [vegetables]*
b. *If even [PAUL] knew that Mary only eats [vegetables]_{SOF}, then he should have suggested a different restaurant*

In Partee's account, the fact that in (11b) *vegetables* echoes information already introduced in prior discourse justifies its intonationally flat contour with respect to the preceding focal unit (*PAUL*), which is new. This interpretation is in line with Ladd's view that no accentuation is usually found on repeated linguistic material (Ladd 1996)⁹. However, reading the sentence in (12b) aloud, no striking prosodic difference would emerge between *vegetables* in this context (where it does not resume already active information, cf. Chafe 1976) and its mention in (11b). In fact, in (12b) *PAUL* would always display a more prominent intonation contour than the other units of the sentence.

- (12) a. *Everyone already knew that Mary is particularly picky with food*
b. *If even [PAUL] knew that Mary only eats [vegetables], then he should have suggested a different restaurant*

Furthermore, as pointed out by Büring (2006), if givenness were the primary cause of a missing pitch accent, we should not expect FACULTY and SMITH in (13B) and (14B), respectively, to bear pitch marking:

- (13) A: *Our grad students only quote the faculty*
B: *No, the FACULTY only quote the faculty*
- (14) A: *Whose students don't even quote Smith?*
B: *SMITH's students don't even quote Smith*

Büring explains this variation as stemming from the syntactic position of the second-occurrence-focused expressions. More precisely, a sentence-initial placement of a focused word or phrase would make it a more preferred candidate for pitch accentuation, as compared to a narrow focus in non-initial position. (13) and (14) are however misleading examples for the interpretation suggested by Büring, since the focalization of *faculty* in (13) and of *Smith* in (14) is not only driven by syntactic fronting of the focused constituents, but also by the function performed by the two units in the sentences, namely that of triggering discourse contrast with respect to some previous wrong content.

Partee believed that, even without a dedicated pitch accent contour, *vegetables* in (11b) and (12b) preserves a focal status thanks to the presence of a focus particle (*only*) entailing a set of semantic alternatives (*legumes, meat, fish, cheese*, etc.) which are contrastively associated with the syntagmatically selected one (*vegetables*). From this standpoint, *vegetables* in (11b) would be classified as a semantic,¹⁰ rather than as an intonation focus.

If *only* is a focus-sensitive operator (i.e. needs an intonationally prominent element in its scope) then the two occurrences of *only eats vegetables* in (1) [corresponding to (11) of the present paper] should have the same analysis. However, if there is no phonological reflex of focus in the second occurrence of *vegetables* then this leads to the notion of “phonologically invisible focus”. The notion of inaudible foci at best would force the recognition of a multiplicity of different notions of “focus” and at worst might lead to a fundamentally incoherent notion of focus (Partee 1999: 215-216).

The idea that focality (when associated to a focus-sensitive operator) may hang either on prosodic or on semantic features raised debates on the relevance and interaction of these two factors in focus interpreta-

tion. Capitalizing on Rooth's theories of focus semantics (Rooth 1992, 1999), Beaver *et al.* (2007), Bartels (2004), Von Stechow (2004), among others, proposed a twofold semantic theory of focus. According to the 'weak' theory, a focused expression requires both a focus marking F and a phonological (and phonetic) realization (Féry & Ishihara 2009). The 'strong' theory entails that resolution of focus happens on pragmatic grounds, which means that association with grammar functions as well as with specific prosodic patterns is more lax, since focus status is derived on the basis of discourse constraints.

An overall consensus on which of the two theories would be the most cogent and suitable to identify some information as the focus of a sentence is still far from being reached. This hurdle also lies in the ambiguous function of adverbs such as *only*, *even* or *also* (Taglicht 1984; König 1991; Andorno 1999) which are not always inextricably associated with focused constituents. In (15-17) I report two examples from English and one from Italian (Lombardi Vallauri 2010; Masia 2017) where the use of traditional focus-sensitive operators such as Eng. *also* (It. *anche*) and It. *persino* (Eng. *even*) appears remarkably non-focal.

- (15) *Also, you may want to use the opportunity of being a TA to ask some useful questions from the professor about the course*¹¹
- (16) *... and, even if she says no, and really means yes, then quite frankly she is playing games and isn't worth the price of dinner*¹²
- (17) *In generale, le tecnologie elettroniche hanno un'origine militare e anche per i microprocessori pare che sia quella la radice*¹³
'In general, electronic technologies have military roots and, *also* for microprocessors, the origin seems to be the same'.

This casts some doubt on the focus-triggering effect traditionally associated with this class of adverbs which, at least in some languages, seem capable of occurring in non-focal contexts as well (De Cesare 2010, 2004).¹⁴ So, Partee's association of focality with the presence of focus-sensitive operators may not hold for all contexts in which such operators are found,¹⁵ unless we assume the examples (15-17) to epitomize cases of focality, but this interpretation would be strongly discouraged in both the Italian and English sentences exemplified. In fact, in (15) the adverbial particle *also* appears to be placed in a sentence position outside of the scope of asserted/focalized information, whereas in (16) *even* precedes a pre-posed topical hypothetical clause.¹⁶ By the same token, in (17) *anche* ('also') is associated with an aboutness topic (Frascarelli 2008). The dubious focus-sensitivity of traditional focalizing adverbs is also addressed by Vallduví & Zacharski (1994) who put forward the hypothesis that rather than causing a sentence unit to be interpreted

as focus, adverbs such as *even*, *only*, etc., ‘parasitize’ on pragmatically and communicatively established focus-ground partitions (Vallduví & Zacharski 1994). Put otherwise, focus operators associate with focus only if the information structure of the sentence requires so.

Another strand of the debate has put forward a body of experimental evidence in support of or in contrast to any form of prosodic prominence characterizing SOF beyond typical pitch accent contours. Using sentences similar to Partee’s example in (11b), Beaver *et al.* (2007) detected very weak increases in pitch on SOF units, in no way comparable with those exhibited by first occurrence focus units. On the contrary, they detected slightly increasing duration of the root syllable¹⁷ and small increases in intensity as well as in the f₀-range (Féry & Ishihara 2005).¹⁸ Recent studies on the acoustic correlates of prominence (Tamburini 2005, Gagliardi *et al.* 2012) demonstrated that pitch accents on focused constituents are indeed often accompanied by duration and intensity features. But, in languages such as English and Italian (for tonal languages like Mandarin Chinese other parameters would be considered as relevant) narrow focused constituents would hardly be interpreted as focal without a distinctly perceptible pitch accent contour. The relevance of pitch accent modulations to narrow focus identification has also been buttressed in experimental studies on visual eye tracking which showed how subjects’ gaze is strongly driven by rising pitch movements on some words (Ito & Speer 2008). Following the tack proposed by Selkirk (1995) and Gussenhoven (1983), I assume pitch accent to be a strong predictor of the presence of a narrow focus, as compared to broad foci in which prosodic prominence may appear as less distinctly marking a single word/phrase or, else, is located on the rightmost end of the sentence.¹⁹ Needless to say, since also non-focused constituents can sometimes display rising intonation peaks (as it happens with aboutness-shift or contrastive topics, cf. Frascarelli 2008; Puglielli & Frascarelli 2008), the mental representation of the speaker’s communicative intention – what focus encodes, besides other pragmatic meanings, in an utterance – as well as the communicative dynamism of the discourse context in which the utterance is produced are of course parameters which the listener cannot dispense with when it comes to interpreting the informative function of sentence units. So, it seems that narrow focality cannot completely dispense with some form of identifying tonal movement. Féry & Ishihara (2005, 2009) took a more cogent line of reasoning in this respect and suggested to attribute the absence of a pitch accent movement on SOF to its post-nuclear posi-

tion in Partee's example sentence. 'Post-nuclear' refers to the fact that the SOF unit follows another focus in the same sentence, this latter bearing a primary pitch accent which reduces the likelihood of any other informative element within the same clausal intonation unit displaying a similar primary accent.

The presence of a following accent [...] depends on the nuclearity status of the preceding accent. If the early accent attracts the nuclear pitch accent under the influence of focus, deaccenting applies, which means that no accent may follow (Féry & Ishihara 2005: 20).

As they rightfully point out, within the sentence domain accentuation is modulated in a way that accents are bound to be downstepped relatively to immediately preceding ones (Féry & Ishihara 2005: 13). They contend that this pattern is not driven by the discourse availability of the focused content, as example (12b) shows; rather, it responds to physiological and mechanic constraints imposing the realization of SOF expressions with the phonetic means which are the most adequate for the position in which they occur (Féry & Ishihara 2005: 22), that is, means which are possible and bearable for the human vocal tract. Moreover, as it will be argued in §4, the cognitive costs associated with focus processing and, notably, with the computation of narrow focalizations, may constitute a valuable groundwork to further speculate on the processing difficulties our attentional system may be faced with when dealing with more than one focus unit in a sentence.²⁰

It has been contended (Frascarelli 2000; Bocci & Avesani 2006; Bocci 2013) that constraints on multiple realization is what opposes focus to topic units.²¹ Indeed, if a sentence can hardly contain more than a focus, as shown in (18), it can no doubt contain multiple topical units without engendering any sort of marginality, as illustrated in the Italian example in (19) (from De Mauro 1993).

(18) #It's *JANE* who went to *PARIS*

(19) [Di vestiti]TOP1, [a me]TOP2, [Gianni]TOP3, [in quel negozio]TOP4 non me ne
Of clothes to me Gianni in that shop NEG to_me of them
ha mai comprati
has never bought
'As for clothes, Gianni, in that shop, has never bought me any'

One may reasonably wonder what such differences in multiple vs

unique realizations may depend on. In my view, they cannot be linguistic or semiotic in nature, since language and communication would no doubt benefit from empowering the informative load of messages with the encoding of more focal units, that is, more pieces of relevant information, at a time. Rather, this constraint seems to be biologically-grounded, in that the human parser would be forced to mentally construe two close pitch-marked focused units with the result of hardly allocating the same amount of cognitive resources on each of them. Put another way, since one of the two foci would attract a greater pool of attentional resources, fewer will remain for a likewise thorough decoding of the other focal unit. A further point to consider relates to the principle Beaver & Velleman (2011) called ‘Competition for Prominence’, running as follows (terminology in parentheses has been taken from Baumann, 2016):

Primary (nuclear) accent can appear only once in an English intonation phrase. From this and the prominence principle, plus the concept of predicativity and importance, it follows that expressions within an I[n]tonation] P[h]rase] will have to compete for primary (nuclear) accent. This competition is what determines how informationally complex material will be realized within an IP. (Beaver & Velleman 2011: 4-5)

A *prima facie* observation that can be made is that prominence assignment responds to an iconicity principle,²² in that being primary nuclear accent sensitive to the focus status of a phrase, the sentence unit bearing a pitch accent marking will also be interpreted as informationally more important than the remainder expressions of the sentence.

The assumption that only one constituent can bear a primary nuclear stress and can therefore be interpreted as focus (Puglielli & Frascarelli 2008: 247) may also find reasonable backing in the cognitive effects which focus elicits in sentence processing as well as in the intrinsic attentional limitations hinted at before. The description of the psycholinguistic and neurolinguistic findings which I propose in the following section is intended to partly contribute to the development of this view.

4. *Topic-Focus processing in the experimental literature*

A common habit among scholars concerned with sentence processing is to regard Erickson & Mattson’s Moses Illusion Test (Erickson &

Mattson 1981) as the opening gambit of the psycholinguistic tradition of studies on information structure processing. The Moses Illusion paradigm was elaborated by Erickson & Mattson to study subjects' responses to questions like (20)

(20) *How many animals of each kind did Moses take on the Ark?*

The authors noticed that most of the subjects responded 'two' without noticing that it was Noah, and not Moses, who took animals on the Ark. In a later study, Bredart & Modolo (1988) replicated Erickson & Mattson's experiment opposing two assertive versions of their testing question, one with the wrong word in focus (*It was MOSES who took two animals of each kind on the Ark*), one having it in backgrounded position (*It was two animals of each kind that Moses took on the Ark*). The authors moved from the assumption that the subjects' failure to detect the distortion resulted from the syntactic position of *Moses* which in Erickson & Mattson's test was post-focal in the sentence. In line with their predictions, the discrepancy was more immediately and frequently noticed by the subjects when *Moses* was focal and accented in the sentence (*It was MOSES who took two animals of each kind on the Ark*), as opposed to when it was topical and not accented. Concurrently, they outlined the focality parameter as a decisive factor in enabling or inhibiting error detection in a sentence. They correlated this result to the greater amount of attentional resources devoted to the processing of focused information. Put otherwise, since focus is processed with a major expenditure of cognitive resources, focal information is more thoroughly elaborated in the receiver's mind, and so its semantic congruity or consistency with respect to previous discourse or general world knowledge is more easily noticed.

These preliminary observations were later appraised in some reading time studies. For example, Birch & Rayner (1997), who defined focus as the newly asserted information in discourse and the most prominent information in the sentence, found that the reading of focused constituents, as opposed to backgrounded constituents, was slower and involved more frequent regressions than topical information, which is indicative of increasing costs in mentally representing focused contents. Espousing an alternative semantics approach to focus, Ward & Sturt (2007) developed a change-detection paradigm and presented their subjects with two readings of a text. Across the two presentations of the text, a critical word either changed to a semantically-related word or remained unchanged. Some of the changed words were focalized, others were part of the background unit of the testing sentence. Results showed that word

changes were noticed by the subjects only when they were in focus, whereas they were often dismissed when they occupied non-focal positions in the sentence. The authors interpreted this result as the effect of focus to induce a more detailed lexical-semantic representation of a word meaning.

Another body of evidence comes from the neurophysiological domain where pitch accent modulation and focus interpretation have been associated with effects in two event-related potential components: N400 and P600. Event-Related Potentials (ERPs) are voltage changes of the electrical activity of the brain recorded from the scalp and are induced by external stimulations or internal cognitive events. The study of ERPs has particularly enriched our present knowledge of the cognitive mechanisms subserving language use and comprehension, as they allowed a more in-depth and non invasive investigation of the language-brain interface at a more fine-grained level. The above-mentioned neurophysiological components are the most widely investigated in relation to language-processing. N400, a negative deflection peaking approximately 400 ms after stimulus onset, has been associated to the recognition of less expected words and difficulty of semantic memory access and retrieval (Kutas & Federmeier 2000; Lau *et al.* 2008), as well as semantic integration/unification mechanisms (Hagoort & Van Berkum 2007). Other findings correlate N400 modulations with the processing of words which are inconsistent with the discourse representation (Nieuwland & Van Berkum 2006), individual world knowledge (Hagoort *et al.* 2004), individual beliefs (Van Berkum *et al.* 2009), or the hearer's information about the speaker (Van Berkum *et al.* 2008). P600, a positive deflection peaking between 500 and 1000 ms, was initially studied in relation to the encoding of syntactic errors and structurally complex sentences. For this reason, it was usually referred to as Syntactic Positive Shift (Osterhout & Holcomb 1992; Kaan & Swaab 2003). Later studies reported the elicitation of P600 effects also with semantic reversal anomalies (Kim & Osterhout 2005), with the interpretation of ironical utterances (Regel *et al.* 2011) and figurative meanings (Bambini *et al.* 2016). At the discourse level, P600 modulations have also been interpreted as reflecting difficulties in integrating syntactic and semantic information (Friederici 2011; Kuperberg 2007) as well as in updating the mental representation of the discourse with new information (Burkhardt 2007; Domaneschi *et al.* 2018). The involvement of these two ERP components has also been inquired in experimental works on information structure processing. For example, Wang *et al.* (2011) conducted a study where they manipulated the semantic congruence of focused and non-focused words in question-answer pairs, as shown below.²³

(Re-)assessing the status of Second Occurrence Focus in information structure

- (21) *What kind of vegetable did mum buy for dinner today?*
a. *Today, mum bought EGGPLANT_[CONGRUENT]/BEEF_[INCONGRUENT] for dinner*
b. *Today, MUM bought eggplant_[CONGRUENT]/beef_[INCONGRUENT] for dinner*

They compared the ERP responses to the semantically congruent and incongruent words between the focused and non-focused conditions finding a more enhanced N400 effect elicited by incongruent words in the focused condition. In another ERP study, Wang *et al.* (2012) investigated information structural influences on the depth of syntactic processing by comparing sentences with syntactic violations in focus with sentences where the same violations were in topic position. This time P600 effects were observed when the violations were in focus position because their focal packaging attracted a greater pool of attentional resources.

Interestingly, brain electrical activity is not only sensitive to the detection of focalized vs topicalized contents or to their semantic congruence or incongruence with respect to prior discourse, but also to appropriate/inappropriate uses of accentuation patterns to mark focused and topicalized constituents, that is, when a sentence unit to be interpreted as topic displayed superfluous accent and a sentence unit to be interpreted as focus lacked an expected pitch accent contour. Studies pursuing these research questions do not converge on the exclusive involvement of a single ERP component; rather, both N400 and P600 activity seems to be involved in the interaction of topic-focus marking and pitch accent modulations. Conceiving prosodic accentuation as a distinctive property of focused constituents in Japanese, Ito & Garnsey (2004) conducted an ERP study on the effects of focus-related prosodic mismatch in this language. The lack of pitch accents on expected focused words has been observed in connection with a more prominent posterior positivity when the critical word was the subject of the sentence, and a less significant but widely observable anterior negativity when it was the direct object. The combined activity of N400 and P600 in response to more or less congruent prosodic signaling of information structural cues was also found by Heim & Alter (2006) in an ERP experiment aimed at measuring the effects of more or less consistent positions of pitch accent contours on focal and non-focal sentence contents, where focus has been described as the most semantically/pragmatically salient information of a sentence. They noticed that when pitch accent expectedly falls on focused content, a higher N400 peaking is elicited. Conversely, when new information lacks appropriate accentuation, a more prominent positive response is elicited. In a later study, Dimitrova *et al.* (2012) compared unaccented and accented given contents and

found an early positive shift around 100 ms, followed by a right-lateralized N400 effect for the accented condition, which she interpreted as reflecting attentional resources captured by accentual prominence (Wang *et al.* 2014: 356). As suggested by Wang *et al.* in a recent review (Wang *et al.* 2014: 355) “the larger negativity for the accented new information [...] might reflect increased unification load of the words because more attentional resources were allocated to the accented information”.

Other interesting findings from the neurophysiological domain come from studies on oscillatory brain dynamics. Brain oscillations are represented by different rhythms of brain activity which vary in range and amplitude depending on the mental operation triggering them. For each brain rhythm, neuronal networks can oscillate with or without synchrony. These two oscillation patterns characterize the activity of different frequency bands. For some bands, chiefly theta and delta, neural synchronization indicates extra involvement of cognitive resources because the processing task imposes a greater mental effort. Under the same condition, neurons respond desynchronically in alpha and beta bands, with alpha being notoriously associated with increasing attentional demands (Pfurtscheller & Lopes da Silva 1999) and beta with the processing of unexpected stimuli (Weiss & Müller 2012). Compared to ERP measurements, brain oscillations reveal non phase-locked activity and are usually ‘induced’, rather than evoked. For this reason they cannot be inquired through standard averaging techniques, which are used for event-related potentials instead. An EEG experiment conducted by La Rocca *et al.* (2016) found that the processing of accented focused phrases – whether associated with given or new contents – correlated with an increasing Power Spectrum Density (Event-Related Synchronization) levels in the theta frequency band indicating working memory overload induced by accentual prominence.

The findings discussed above suggest that the brain response to prosodic prominence involves some kind of cost. Yet, the human brain also seems to respond to inconsistent accentuation, namely when a prosodic cue is missing or is redundant, which imposes a revision of discourse-based expectations on the distribution and status of information units in the sentence. Transposed to our core discussion, the SOF expression in Partee’s example sentence lacks a prosodic contour that is generally found on narrow foci. This is why I believe that they would impose a taxing mental operation if they were to be interpreted as really focal. It must be pointed up that all the experimental studies described in the foregoing, brain response to focality has been inquired mainly considering narrow focus units. In fact, as already said, while certain broad focus

units may display a more flattened prosodic contour – as well as in some topic-comment sentences, focus narrowed to single words, like *MUM* or *EGGPLANT* in Wang *et al.*'s examples in (21), are generally likely to bear pitch-marking. To me, this makes the reported findings even more telling for better canvassing the nature of SOF, which appears to instantiate a narrow type of focus.

Outside of the experimental domain, the cost imposed by focus processing had already been discussed by Chafe (1994) and Givón (1975) who theorized principles known as One-New-Idea Constraint and One-Chunk-per-Clause principle, respectively. According to these principles, sentences or, more precisely, intonation units²⁴ in any language tend to contain only one item of new information (what Chafe calls 'activation'²⁵). However, if we look at the way ordinary communication works, this constraint does not appear to be so binding with relation to the way given and new contents are distributed in sentences. In fact, if we consider example (22) below, it can be easily noticed that both the phrases *this guy* and *came by* (both emphasized in the example) – making up a single intonation unit – encode novel information, since none of the two contents already has an antecedent in the co-text (Masia 2017).

(22) Interviewer:

You're – among other things – you've been a designer of these fabulous Barney's windows. Talk a little about how one gets to be a designer of Barney's windows. Where did that skill come from? And, was your family encouraging and nurturing you? Uh?

Speaker:

Well, I grew up in this town called Reading, which is outside of London, and it was a sort of very dismal – it's where Oscar Wilde was in jail – and there was a biscuit factory and all different factories, and it was just dismal. And I thought: "There has to be something more to life than this". So, my early years, in the fifties, London was very dismal, and then realizing I was gay and thinking: "God, I'm going to end up in the prison, like Oscar Wilde" – 'cause it's illegal, hello?! – So, things weren't looking so great, and then my mum would say: "Or you can get a job at the biscuit factory, or at the metal box factory". And I thought: "Oh God! You've got to be joking!". So, I used to do freelance display jobs, 'cause a lot of little stores in London – they didn't have a freelance display person, so I would do these freelance jobs. They were fine and there was extra cash. Then, this guy came by and he said: "That's great! It's really fun! You should come work for me in L.A...".

Needless to say, everyday interactions are teeming with examples of all new sentences in which none of the information units they are made of is already given in the universe of discourse. So, rather than involving the given-new level of a sentence, the constraint Chafe and Givón hint at seems to bear more conspicuously on the distribution of topic and focus units, and, notably, on the number of topical and focal realizations that sentence contents can receive. Indeed, in spite of being

both new, the informational realization that the phrases *this guy* and *came by* seems to feature is that of a topic-comment articulation, with *this guy* encoding the topic of the sentence and *came by* its comment.

In formal approaches (Chomsky 1971; Rochemont 1986; Frascarelli 2000), constraints on the number of focus units in a sentence are believed to hinge on the characterization of focus as an ‘operator’ whose function is to quantify a variable contained in the presupposed, topical part of the sentence. Since only one variable can be contained in the presupposition/topic, not more than one focus can accordingly be realized. Taking a more functional tack, I suggest to look beyond language boundaries to account for the rationale of such constraints. In fact, as already said, it is fairly unlikely that these constraints might relate to limitations affecting the expressive means of natural languages since communication would no doubt benefit from conveying more units of information at a time. Instead, the view I am proposing is that if a restraint must be posited on the distribution of focus units in linguistic messages, this should find a more sensible explanation in our brain’s inability to cope with more effortful, relevant and purposeful tasks at a time or at short distance (Pashler 1994; Watanabe & Funahashi 2014; Christiansen & Chater 2016). This standpoint obviously has repercussions on the interpretation of discourse phenomena such as SOF, whose alleged focal characterization would contravene the principle of focus uniqueness, let alone principles of effort economy. On this account, a sentence like Partee’s in (1b), containing both a pitch-accented focus unit and another (unaccented) focus unit (the SOF), would be too demanding to process since our limited amount of attentional resources should be distributed among two close informationally prominent units, one of which displays incongruent accentuation, which increases processing demands.²⁶ I leave this contention pending for the moment to move to a third diagnostic involving a reflection on the relation that SOF bears to illocutionary force and to the informational architecture of the linguistic context that licenses it in a sentence.

5. *The micropragmatic view*

In this section, the micropragmatic profile of SOF will be canvassed. Although the boundaries between micro- and macro-pragmatics are still the plank of much contention in the relevant literature, the body of evidence I refer to as micropragmatic in this section aims at gauging how the information structure of a SOF-sentence contributes to the development of an ongoing discourse and how it leads the receiver to

update her common ground knowledge in a way that is consistent with the communicative purpose of the speaker. Taken together, the phonological, processing and micropragmatic perspectives discussed are intended to put forth a 'functional' account of the nature of SOF which overcomes the interpretive limitations characterizing many logico-semantic approaches.

In what follows, I will seek to address the response of SOF units to illocution change tests (Lombardi Vallauri 1995). In §2 we have seen that these tests – in which the truth conditional meaning of a sentence is negated, interrogated, doubted or reported within the scope of an evidential expression – allow distinguishing between focal and topical or backgrounded information units.

Now, it could be interesting to assess whether SOF response to this test makes it more similar to one of the two information units. The reason for considering the illocution change test is that it appears to be particularly sensitive to prosodic and syntactic patterns allowing the interpretation of a sentence unit as focus. In this sense, it may prove to be strongly predictive of the location of focus (and topic) boundaries, especially when they are identified by dedicated markers. Since the working definition of focus provided at the outset partly stresses the relevance of speaker's goals and communicative intentions, I assume the application of this test to yield evidence which is on the whole compatible with the purpose of the forthcoming discussion. For terminological consistency, I will consider the term topic here as coterminous with background information, given the fact that the test can be equally applied to either topic-comment and focus-background partitions.

Our null hypothesis for this test is that changing the illocutionary force of a SOF sentence and making it the scope of dubitative or evidential expressions, the SOF unit will behave like any other typical focus, thus changing its truth conditional meaning. If this is not the case and the null hypothesis can be rejected, SOF will not behave like a real focus and must therefore instantiate an information unit of a different sort.

With this background in place, consider (23) and its reformulation in (24).

(23) *Even JOHN knew that Mary only eats [vegetables]_{SOF}*

(24)

- a. *It is not true that even JOHN knew that Mary only eats vegetables*
- b. *Is it true that even JOHN knew that Mary only eats vegetables?*
- c. *I don't know if even JOHN knew that Mary only eats vegetables*
- d. *I've been told that even JOHN knew that Mary only eats vegetables*

Interestingly enough, in all the reformulations above what seems to be affected by the negative operator in (a), the interrogative illocution in (b), the dubitative expression in (c) and the indirect evidential in (d) is the first focus phrase *JOHN*, and not the SOF unit *vegetables*. Thus, what is denied in (a) is not the fact that someone knew that Mary only eats vegetables, but the fact that also John, contrary to the speaker's expectations, knew that. In (b) what the question is addressing is whether John or somebody else knew that Mary only eats vegetables. In (c), what is doubted is not whether somebody knew that Mary only eats vegetables, but whether it was John who knew that. Finally, in (d), what is conveyed as reported knowledge is the fact that also John – contrary to the speaker's expectations – knew that Mary only eats vegetables.

At first blush, the SOF unit *vegetables* in (23) behaves similarly to the participial clause *talking to her mother* in example (11), which belonged to the non-focal part of the sentence. In fact, the resistance of the SOF unit to the scope of illocutionary, epistemic and evidential operators makes it less akin to the preceding focus unit *JOHN* and much more similar to the rest of the backgrounded information of the sentence.

Another aspect to be fleshed out relates to the contribution of SOF to the communicative dynamism of a discourse. Drawing on Kiss (1998), I have recalled that two main functions of focality are the informative or presentational function, usually associated with the encoding of new information (25), and the contrastive (also referred to as corrective), targeted at replacing some information wrongly assumed by the speaker. In this latter status, focus can convey either given or new information, as illustrated in (26-27)

INFORMATIVE FOCUS

- (25) A: *What did John buy for his mother's birthday?*
B: *He bought her a new ARMCHAIR*

CONTRASTIVE NEW FOCUS

- (26) A: *I heard that Jane went to Paris*
B: *No. Actually MARK went to Paris*

CONTRASTIVE GIVEN FOCUS

- (27) A: *I heard that Mark and Jane went to Paris*
B: *Actually, only MARK went to Paris*

It is also worth highlighting that if new foci can be either informative or contrastive, given foci can only be contrastive, since no message could be produced with the aim of informing the interlocutor about something he already knows because already active in prior discourse.

On the contrary, a message can well be produced with the purpose of modifying a set of pre-established assumptions, which characterizes the contrastiveness of given foci as ‘pragmatically new’ anyway in their overall discursive function (Masia 2017).²⁷

Let us consider Partee’s seminal example again:

- (28) a. *Everyone already knew that Mary only eats [vegetables]*
b. *If even [PAUL] knew that Mary only eats [vegetables]_{SOF}, then he should have suggested a different restaurant*

As far as I can guess, the second occurrence of *vegetables* in (28b) does not seem to add information to the stock of shared knowledge or, put otherwise, the context set established up to that point of the conversation. In this sense, it cannot be regarded as performing an informative or presentational focus. Although its givenness may qualify it as a contrastive focus, *vegetables* in (28b) does not seem to replace other information in the prior discourse. So, if it neither updates the receiver’s common ground with novel content nor does it modify it in any way, what pragmatic function would *vegetables* have in B’s sentence? How does it contribute to the communicative development of the exchange? *Only*, in the sentence, keeps its logico-semantic function of selecting an alternative (*vegetables*) from a set of other possible ones occurring in its stead (*meat, eggs, milk products, etc.*), but this function does not necessarily require the adverbial operator to license a focal interpretation of the selected variable. This is why in some lines of investigation (De Cesare 2006), the term ‘focalizing’ adverbs has been replaced by ‘paradigmatizing’ adverbs, since, rather than legitimizing a focal interpretation of the linguistic entity they introduce, they evoke a paradigm of alternatives to that entity (De Cesare 2006: 397). The focal or topical (or background) status they receive in the sentence hinges on the speaker’s criteria to hierarchize information according to the priorities of the communicative task at hand.

6. Concluding remarks: for a redefinition of the phenomenon of SOF

It may now come in useful to summarize the points so far developed within the phonological, processing and micropragmatic domains.

1. PHONOLOGICAL EVIDENCE

SOF lacks the traditional prosodic profile exhibited by ‘narrow’ focus units. It may be characterized by lengthening and/or intensity which are however less decisive features of narrow focalizations.

Moving from Féry & Ishihara's account of deaccentuation as a 'side-effect' of post-nuclearity, I suggest correlating post-nuclear deaccentuation to the non-focal status of SOF. Put otherwise, the SOF unit is not accented because the placement of pitch marking on a preceding constituent consequently 'cast' a backgrounded interpretation on the rest of the sentence to which the SOF belongs.

2. PROCESSING EVIDENCE

Focus is a costly unit to process because it draws the receiver's attention on the content it conveys. Resource allocation on a focused constituent is driven by prosodic cues and, specifically, by pitch accentuation. Also when a (narrow) focus lacks appropriate accentuation does its processing impose higher costs, which are essentially revision costs. So, a sentence containing a pitch-marked focal unit and another (intonationally flat) focal unit would force the receiver to deal with two demanding mental operations within a single clause unit, which would render sentence processing inefficient.

3. MICROPRAGMATIC EVIDENCE

SOF does not respond like typical focused constituents to illocution change tests. Its discursive behavior rather appears akin to that of a backgrounded sentence unit. Moreover, within the gamut of possible functions performed by focal constituents in the conversation, that is, the informative and the corrective function, SOF does not seem to fall in either of these two categories.

To the three parameters outlined above, a fourth factor worth recalling is the ambiguous nature of focus-sensitive operators, which have long been debated as representing the source of focality of SOF (Partee 1999), despite its unaccented profile. Presenting examples from English and Italian, I tried to show how association of focus to adverbs such as *only*, *even*, *also*, etc. is not a systematic pattern since these particles can be found in non-focal (backgrounded) contexts, as well. So, the fact that in Partee's examples SOF is preceded by *only* is not a cogent reason to even view SOF as a 'semantic' and not a pragmatic focus. In fact, focus cannot be just semantics. Focus has a pragmatic nature and – along with topic – it has the function of organizing information so as to make linguistic sentences more fit to the development and purposes of the discourse, which is something that semantics alone cannot do.

In the light of the evidence discussed, my suggestion in the present paper is to rethink the nature of SOF as a mere instantiation of

background information. In fact, there would be no point in modifying traditional conceptions of focality to account for the information status of a discourse unit that displays very few – if no – similarities to typical narrow foci. The seminal contention on SOF and its atypical focal nature began with the aim of trying to make sense of the function of *only* in phrases like *only eats vegetables* in example (1), as also suggested by Partee's quotation (Partee 1999: 215-216, cf. §3 of this paper). So, while Partee explained the deaccented profile of SOF as a reflection of its givenness, the presence of *only* should allow – according to Partee – looking at SOF as preserving the status of focus anyway, since in her account, focus has the function of introducing the alternatives that are necessary for the interpretation of the focus-sensitive operator. The view I put forward instead is that deaccentuation may undoubtedly be induced by givenness, but also – and maybe even more conspicuously – by the 'non-focality' of the SOF phrase introduced by *only*. As a matter of fact, if givenness were the sole decisive factor of prosodic deaccentuation, we should expect it to play a role also in contrastive focalizations involving given contents, as is the case of (27) above. On the contrary, even when focus falls on a given content, it is still accented and this must be attributed to the pragmatic role it plays in the sentence and the way it impacts the receiver's mental representation of the discourse.

On balance, the phenomenon of SOF has been brought to the linguist's attention because of a possible misinterpretation of the features relevant to focus realization. Intonation is no doubt a compelling trait and, looking at the way narrow focus prosody is realized in most European languages, lengthening and intensity cannot alone take on the pragmatic meanings of pitch accent modulations. The cognitive factor is likewise important because the mental effort associated with focus processing suggests (a) that the human brain is sensitive to the way information is hierarchized in a sentence, and (b) that two close focused constituents would be too demanding for our limited brain, and so uttering a sentence containing two focal units would simply be counter-productive for the efficiency of our information processing system. Last but not the least, SOF does not behave like typical foci when the illocutionary force of a sentence is modified.

In proposing to recast SOF as a non-focal category, I also want to stress that the informational status SOF seems to instantiate is that of a 'backgrounded' unit, in that it 'echoes' some information which the preceding context has already set (Vallduví & Engdahl 1996) and, in so doing, it only reminds the addressee of some information already introduced in the shared universe of discourse.

Needless to say, the contention developed in this paper is just an attempt to contribute to current reflections on SOF by appraising already known approaches to the phenomenon, and by including in the debate considerations developed within the processing and micropragmatic purviews. I am sure, though, that this is not enough for an exhaustive redefinition of the phenomenon of SOF, but I am confident that the argumentations brought up throughout the discussion might help refining what we know from the state-of-the-art literature and provide a useful groundwork for further research on the subject.

Notes

¹ In Cresti's (2012) Language into Act theory, 'focus' is characterized as a distinct notion than comment, in that, while comment is laid out as the unit conveying the illocutionary aim of the utterance, focus is rather defined as a semantic notion, conveying either a meaning of exhaustiveness, when it carries new information, or a meaning of contrast, if it corrects information uttered in previous discourse. Following recent appraisals of these views in Lombardi Vallauri (2009) and Puglielli & Frascarelli (2008), I will use both the terms 'focus' and 'comment' in a pragmatic sense, namely, as both referring to the speaker's informative goal in the conversation and updating the receiver's common ground. When needed, 'comment' will be used to designate a focalized VP in a topic-comment structure, while 'focus' will indicate either broad focus sentences or narrow focus units.

² Lombardi Vallauri (1995: 362): "If the aim of the utterance is to assert a certain content and not others, the aim of its negation must reasonably be the negation of this content, and only of this content. The same should be true for the interrogation and for the doubt about a given utterance. Indeed, this is what happens".

³ The experimental findings discussed in §4 stem from different terminological approaches to the notion of focus. This terminological conundrum cannot be addressed in the present inquiry, so I will make it my responsibility to provide clarifications on the definitions adopted in these studies. I assume, however, that the notion of focus I cleave to in this paper might provide a useful grounding to conjecture on the implications of the experimental results described.

⁴ Kiss (1998: 245) defines identificational focus as representing "a subset of the set of contextually or situationally given elements for which the predicate phrase can potentially hold; it is identified as the exhaustive subset of this set for which the predicate phrase actually holds".

⁵ There are cases in which given contents can be focalized with no contrastive purpose, as in the following exchange:

A: *I've heard that the Chinese vase was broken by MARY!*

B: *You're right. MARY broke it!*

These uses are however much rarer, given the fact that they do not add information to the stock of shared knowledge, but rather confirm information speaker A already believes to be true. In this sense, they weakly contribute to the communicative dynamism of the conversation; therefore, if ordinary interactions were teeming with non contrastive given foci like that in B's utterance, communication would be definitely

less cooperative.

⁶ As pointed out by Kiss (1998, 246): “An information focus is present in every sentence, but not every sentence contains an identificational focus”.

⁷ Stalnaker (2002) outlined *common ground* as “mutually recognized shared information in a situation in which an act of trying to communicate takes place” (p. 704), or, put otherwise, as “presumed background information shared by participants in a conversation” (p. 701, note 1).

⁸ Following Lambrecht’s convention in the original example, in (c) and (d) we leave only the last word in capitals because, although focus interpretation is believed to project to the entire predicate and to the entire proposition, respectively, the last word is usually that bearing the primary nuclear accent of the sentence.

⁹ Ladd particularly observed this pattern for English.

¹⁰ The status of semantic focus is also discussed by Rooth (1992) who argues that when a phrase is interpreted as semantic focus it need not be marked by pitch prominence.

¹¹ From p. 125 of Gupta, Nijay K. 2011. *Prepare, Succeed, Advance*. Pickwick Publications, Oregon.

¹² From Chbosky, S. 1999. *The Perks of Being a Wallflower*. MTV Books.

¹³ Cf. Lombardi Vallauri (2010).

¹⁴ In Krifka’s terms (2004: 190) “If an operator is analyzed as focus-sensitive (i.e., associated with a focus) in one type of use, it must be analyzed as focus-sensitive (associated with a focus) in all types of use”. This amounts to stating that if also non-focal contexts are possible for traditional focus-sensitive operators, then such operators should not be conceived of as being strictly focus-sensitive. See also De Cesare (2006: 397) on this position: “Le proprietà testuali di questi lessemi sono invece meno note. Si sa però che, a differenza di quanto suggerisca il loro nome più usuale, essi non hanno (sempre) una funzione focalizzante in senso pragmatico-testuale [...] da soli, cioè, essi non bastano – come l’intonazione e/o certi costrutti sintattici marcati a creare un Fuoco all’interno dell’Enunciato. Tutt’al più, quando si pongono a ridosso del Fuoco dell’Enunciato, essi possono aiutare a identificare la porzione di testo in focus” (“The textual properties of these lexemes are instead less known. It is widely accepted, though, that, differently than what their name hints at, they do not always have a focalizing function in the pragmatic-textual sense [...], that is, they cannot autonomously realize a Focus within an utterance, as compared to intonation patterns and/or other marked syntactic constructions. Rather, these adverbs can help identify the information unit featuring the Focus of the sentence.”)

¹⁵ In a more recent lecture, Partee (2005) acknowledged that there are cases in which, rather than triggering focalizations, the scope of focus-sensitive adverbs is rather fixed by the position of focus. She buttressed this hypothesis discussing sentence pairs such as the following:

John also introduced [Bill]FOCUS to Sue

John only introduced Bill to [Sue]FOCUS

and argues that focus plays a crucial role in determining the presuppositions entailed by the focusing adverb.

¹⁶ Cf. Givón (1984) for a topical interpretation of preposed hypothetical clauses.

¹⁷ It must be highlighted that the association of duration parameters to SOF realization has been found to be much less systematic than argued in Beaver *et al.*’s study. In fact, in another production experiment, Howell (2008) found that SOF units realized by verbs and nouns differed in the duration of their root syllable, with verbs pronounced with a longer root syllable than nouns. So, duration seems to also be driven by word class variations.

¹⁸ Using similar testing sentences, Bartels (2004) noticed that SOF expressions are instead realized with shorter duration and intensity than first occurrence focus expressions.

¹⁹ Féry & Ishihara (2005: 12): “In an information structurally neutral (all-new)

context, the rightmost stressed syllable in the utterance bears the nuclear stress, and attracts the nuclear pitch accent. When a narrow focus is assigned somewhere else, it is this F[irst] O[ccurrence] F[ocus] which attracts the nuclear pitch accent”.

²⁰ See also Christiansen & Chater (2016) for an insightful description of memory and attentional constraints on more effortful processing tasks performed at once.

²¹ Although their account does not all the way fit the framework adopted in this paper, I refer the reader to Neelman & Szendrői’s work (2004) for a syntactic explanation of multiple-focus sentences.

²² Beaver & Velleman (2011: 4-5): “If one expression is more communicatively significant than another expression, then the first should be more surface prominent than the second”.

²³ They moved from a definition of focus as new or contrastive information. This outline is obviously less in line with the distinction I have put forth between packaging criteria and activation degree of information. However, the type of experimental stimuli they used and the conclusion they draw from the gathered data can well be extended to the notion of focus adopted in the present paper.

²⁴ The notion of information unit is here intended in Chafe’s (1987) terms, i.e. as a speech segment of natural discourse that falls into a coherent intonation contour. In Chafe’s taxonomy, the most widespread intonation unit type to be verbalized by speakers is the clause, which he includes in substantive intonation units (Chafe 1994).

²⁵ “The fact that in the end we are left with few if any cases in which there are two or more separately activated new ideas within the same intonation unit suggests the hypothesis that an intonation unit can express no more than one new idea. In other words thought, or at least language, proceeds in terms of one such activation at a time, and each activation applies to a single referent, event or state, but not to more than one. If this is a limitation on what the speaker can do, it may also be a limitation assumed for the listener as well. It may be that neither the speaker nor the listener is able to handle more than one new idea at a time” (Chafe 1994: 109 – emphasis mine).

²⁶ On this account, while costs elicited by congruently accented narrow foci would be updating costs, those stemming from the decoding of inconsistently accented narrow focus units would correlate with the recognition of an anomalous information packaging strategy.

²⁷ I thank the anonymous reviewer for further expanding on this interpretation by suggesting to recast given foci as ‘new’ in the sense of belonging to the asserted alternative of the sentence.

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