

# Existential Generics and Information Structure\*

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**Abstract.** Bare Plurals in English are ambiguous between a generic and an existential interpretation. Cohen and Erteschik-Shir (2002) claim that information structure completely determines which reading is available: a topical bare plural is interpreted generically while a bare plural in focus is interpreted existentially. In this paper I argue that although their observation largely holds, several unmotivated assumptions about focus-topic articulation make the framework inflexible. I propose that an alternative framework that models information structure within discourse using questions, answers and answering strategies is superior in both explanatory power and empirical cover.

**Keywords:** Bare Plurals · Generics · Focus · Topic · Question Under Discussion

## 1 Introduction

Bare plurals (henceforth BPs) exhibit an array of denotational possibilities. Most agree that an English BP can receive at least three different interpretations depending on the linguistic and non-linguistic context in which it is embedded. Consider (1):

- (1) a. Pandas are on the verge of extinction.
- b. Pandas are friendly.
- c. Pandas are foraging.

Direct Kind Predication (DKP), as exemplified by (1a), predicates a kind-selecting property (e.g. ON-THE-VERGE-OF-EXTINCTION) on a kind.<sup>1</sup> ‘Pandas’ in (1a) functions like the name of the kind *Ailuropoda melanoleuca*. In contrast,

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<sup>1</sup> A kind is construed as an abstract individual consisting of the maximal join of its instantiating atomic individuals (Krifka 2003).

a Characterizing Statement (CS) such as (1b) expresses a generalization associating a characteristic property with relevant instances of a kind. What (1b) conveys is roughly that, in general, each individual panda is friendly. Lastly, in an Episodic Statement (ES) which describes occurrences happening at a specific time and locale, a transitory/accidental property is associated with the mere existence of instances of a kind. What (1c) says is that some pandas somewhere are in the middle of the foraging activity. The three readings of the BP are called ‘kind’, ‘generic’ and ‘existential’ respectively. The three types of predicates are called ‘kind-level’, ‘individual-level (I-level)’ and ‘stage-level (S-level)’ respectively.

A prerequisite to any analysis is an examination of the observed linguistic data in a sufficiently fine-grained level. Approximately, the ‘raw’ linguistic data in our possession are just a list of three-way associations: the (un)availability of certain readings is associated with certain linguistic forms on the one hand, and occasions of utterance on the other. Previous accounts of BPs have focused on the two-way association between readings and linguistic forms, paying less attention to the occasion of utterance (Carlson 1977, Kratzer 1989, Diesing 1992, Chierchia 1998, Dobrovie-Sorin 1997, McNally 1998 a.o.). A promising strategy would be to incrementally incorporate more and more types of annotation of the occasion of utterance into any characterization of linguistic data and their analysis, starting from the ones the correspondence of which with linguistic structures are relatively well-understood.

One prime candidate for the mediating role between linguistic structure and non-linguistic context is Information Structure (IS) since many key notions of IS such as focus and topic have overt linguistic realizations (intonation, word order and morphological markers etc.) both in English and cross-linguistically. Early attempts within this line of research explored the truth-conditional effect of either different topic/focus assignments or intonations on the interpretation of a given BP-containing sentence, drawing analogies between BP-characterizing sentences with adverbial quantification and conditionals (Laca 1990, Kamp and Reyle 1993, Krifka 1995, Rooth 1995, von Stechow 1997, Jäger 2001). Cohen and Erteschik-Shir (2002) (henceforth C & E) follows their spirit. By incorporating notions such as topic and focus into the descriptive<sup>2</sup> characterization of linguistic data, their account shows prospects towards a more comprehensive understanding of the exact distribution pattern of BPs’ distinct readings. They reach a simple generalization: a BP in topic is interpreted generically while a BP in focus is interpreted existentially. They propose some partitioning rules connecting topic/focus assignment with established syntactic/semantic distinctions such as arguments vs adjuncts, whether a predicate introduces an event variable, whether the verb carries presuppositions and whether a nominal can introduce a discourse referent.

<sup>2</sup> This is a simplification. C & E take topic-focus assignment to be given after syntactic analysis but before semantic evaluation.

Despite its elegance, their approach is inadequate in several aspects. Specifically, three implicit assumptions they made are questionable: First, the existential and the generic readings are truly ambiguous, the availability of one necessarily blocks the other; second, IS notions such as topic and focus are syntactic/semantic primitives that must be encoded at the level of grammar and accessed in a strictly bottom-up manner during derivation before semantic interpretation; third, the correspondence between topic/focus assignment and existential/generic readings of BP is deterministic. Consequently the account both overgenerates in some situations and undergenerates in others.

In this paper I discuss the merits and limitations of C & E’s account and provide some additional data. I conclude that while C & E’s observations of the correlational trend are largely correct, a more flexible approach fares better both in terms of explanatory power and empirical cover. We need to (1) treat the competition between different readings of BP as dynamic and manipulated by a number of linguistic and non-linguistic factors; (2) render IS notions such as topic and focus epiphenomenal by reducing them to more fundamental notions on the one hand and connecting them more closely with discourse phenomena on the other.

## 2 An overview of Cohen and Erteschik-Shir 2002

C & E claims that a BP in topic is interpreted generically while a BP in focus is interpreted existentially. To illustrate, consider (2) (adapted from their example (46), p 140): The only available reading to (2a) and (2c) is generic, while both generic and existential readings seem to be available to (2b).

- (2)
- a. Girls are intelligent.
  - b. Girls are present.
  - c. Girls are thirsty.

The authors adopts a notion of ‘aboutness topic’: intuitively it is what the sentence ‘is about’ (Strawson 1964). Metaphorically, following Reinhart (1981), it is the ‘address’ in the mental file catalogue under which propositions are stored and evaluated. This motivates the Topic Constraint: every sentence must have a topic. Following Erteschik-Shir (1997), it is further assumed that the eligibility of topichood consists in two conditions: syntactically it should be an argument, not an adjunct (Radford’s (1988) ‘as for’ test shows that adjuncts are bad topics), and semantically it should denote a specific discourse reference. The default rule in English is to assign topic to the subject and focus to the predicate. Without additional assumptions, C & E’s account would predict subject BPs to be generic across (2a)–(2c), contrary to the fact. Therefore following Kratzer (1989) they assume that a stage-level predicate like one in (2b)–(2c) introduces a spatial-temporal event variable while an individual-level predicate like one in (2a) does not. If this event variable has argument status, it can serve as a ‘stage topic’

and allow the subject BP to be in focus<sup>3</sup> and as a result receive an existential interpretation. This story checks out if we perform some test on (2b)–(2c) to determine the argument/adjunct status of the BP within each sentence:

- (3) a. ?In the garden, Sue is present.  
b. In the garden, Sue is thirsty.

Since adjuncts but not arguments can occur sentence-initially, the contrast in (3) suggests that only the event variable in (2b) can serve as a stage topic and license the existential reading of the subject BP.

This account seems to capture a pattern within the data: when a BP is the subject, the availability of its existential reading appears to be conditioned by the type of predicate it combines with. It is widely held that an unaccusative verb introduces an implicit locative argument. If this argument is assigned as topic, the subject can be in focus and hence have an existential reading. This prediction is apparently born out:

- (4) a. Journalists arrived (at the conference room).  
b. Spectators left (because they could not see the field).

The additional implicit argument does not have to be locative. See (5), which arguably cannot receive a generic reading.

- (5) Scientists were intrigued.

It is not a generalization about the scientific community in general that their members are intrigued. Rather, it is a claim about some scientists being intrigued, possibly by a puzzle in some specialized field. If this implicit ‘by phrase’ prepositional argument can serve as a topic, the BP subject can be in focus and receive an existential reading.

Similar explanations apply to sentences with multiple overt arguments. In (6a) ‘Mr. Scarface’ can serve as topic, leaving the subject BP ‘children’ free to be in focus and receive the existential reading. In (6b) any of the three arguments ‘usherers’, ‘freshers’ and ‘around the campus’ can serve as topic, accounting for the judgement that either or both of the BPs can receive an existential reading.

- (6) a. Children are afraid of Mr. Scarface.  
b. Usherers showed freshers around the campus.

Needless to say C & E’s account also nicely extends to data regarding some special accent placement where either the subject or the object is stressed, indicating the status of being in focus.

<sup>3</sup> The assumptions C & E make about focus assignment is not quite clear to me. Apparently they assume what is not marked as topic is necessarily in focus.

(7) a. A: What happened during the earthquake?  
b. B: CHILDREN<sup>4</sup> cried, PEOPLE yelled, and DOGS barked.

(8) a. Plates are dirty.  
(predicted to have generic reading only)

b. This is an awful kitchen—plates are dirty and glasses are broken!  
(observed to have existential reading only)

The authors' treatment of such counterexamples is rather ad hoc. On (7b), it is claimed that given 'an appropriate context', 'an unergative can be construed as indicating a change of state. . . . the state can be construed as the topic of the sentence, freeing a BP...to receive an existential interpretation.' No diagnostics are provided on how to identify which contexts are 'appropriate' (aside from a preceding question), nor is there any independent test to verify what substantiates the intuition that a change of state is being conveyed. Even if we accept their explanation, there is still something about (7b) left unaccounted for: there is a strong intuition that the topics of the three clauses within (7b) is somehow related, not arbitrarily collocated. According to C & E, however, in the reading of (7b) where three nominal are all read existentially, each of the three predicates introduces its own 'change-of-state' stage topic. There is nothing to ensure that the three topics are related (and more specifically, are all about what is being inquired in a preceding question). On (8b), it is even claimed that "Adjuncts are bad topics because normally it is hard to construe a sentence as being about something that is, in a sense, secondary in importance.

213

However, in the appropriate context, which makes it clear that the sentence is, indeed, about the adjunct, an adjunct may be a topic.” In support, they give the following example:

- (9) a. There is no need to put a bed in the office. John will sleep at home; as for the office, he will only work there.  
 b. You ask why the boat is in the harbor? Well, first of all, do not question my decisions. And, as for the boat, John will decide on it, so it has to be here.

This feels like throwing the baby out with the bathwater, given the crucial role the argument/adjunct distinction plays in C & E’s theory. Upon closer inspection, one wonders if C & E are truly committed to the argument/adjunct syntactic distinction per se or something like its pragmatic analogue. In its current form, this forced marriage between an inherently pragmatic notion of ‘aboutness’ with the categorical syntactic distinction between arguments and adjuncts does not look like a happy one. In addition, note that if all there is left for the eligibility for topichood is the vague ‘aboutness’ relation, then even the semantic specificity/discourse reference constraint seems to be on its way out. By going down this route we lose some major explanatory components of C & E’s theory, only to get in return ‘subjects’ of questionable ontological status.

There is an additional set of data which partially supports C & E’s observation and prove the inadequacy of their account at the same time. Consider (10):

- (10) a. ??PhD holders are tenured.  
 b. Only PhD holders are tenured.  
 c. ?PHD HOLDERS are tenured  
 d. PhD holders ARE tenured.

Uttered out of the blue, one has a hard time accepting (10a), supposedly because English by default assign topichood to the subject. In addition, ‘TENURED’ is an individual-level which cannot introduce any spatio-temporal event variable to serve as topic. ‘PhD holders’ thus receives a generic reading. (10a) would be saying that PhD holders in general are tenured—a situation too good to be true, unfortunately. When embedded as the prejacent of a focus-sensitive particle as in (10b), however, the sentence sounds perfectly fine. In fact (10b) is felt to be a truism. Supposedly this is due to the assignment of focus being explicitly marked by linguistic means: ‘PhD holders’ here unambiguously is in focus and thus can receive the existential interpretation. While the reading is partially predicted by C & E’s account, it is hard to see how (10b) can satisfy their Topic Constraint unless one posit yet another type of non-canonical topic. Even with this extra stipulation at hand, there is no straightforward explanation as to why an existential reading of the BP is unavailable in (10c). (10c) differs from (10a) only in having the subject BP stressed. Supposing the BP subject through prosodic

prominence is marked as focus, its IS status should be identical to that in (10b) and receive an existential reading.<sup>5</sup> Yet (10c) exhibits a predominant preference to be read generally. Accounting for the acceptability of (10c) proves to be a challenge too. The BP ‘PhD holders’ apparently receives an existential interpretation while the focus seems to be assigned to some other constituent: here the stressed ‘do’ marks a verum focus. Under their assumption that whatever not marked as focus will fall under topic, the BP here should be read generically. While the exact analysis of verum focus is still under active research (Gutzmann and Miró 2011), this nonetheless shows that there are still cases about which C & E’s theory makes wrong predictions or does not make any clear prediction at all.

I believe it is clear now that some rigid assumptions force C & E to make implausible stipulations in some occasions and fail to cover some aspects of empirical data in others. In the next section I suggest how such assumptions can be amended or relaxed so a more flexible approach can emerge.

#### 4 Question Under Discussion and Contrastive Topic

I propose that the effect of topic-focus articulation on the availability of different readings of BP can be better analyzed within a framework that model information structure using questions, answers and answering strategies (Büring 2003, Roberts 2012). In this framework, the function of information structure is expanded from information packaging with a sentence to common ground management in a larger discourse. Questions, explicit or implicit, are the structuring blocks of any discourse. At a particular stage of discourse, questions, formalized as Questions Under Discussion (QUDs), correspond to conversational goals on the part of the speaker/hear and the linguistic constituent which serve as subject at the level of the utterance. Their answers correspond to ways those conversational goals can be achieved on the part of the speaker/hear and the linguistic constituent which bear focus at the level of the utterance.

One advantage of this approach is its flexibility. In C & E’s framework, the correlation between focus and existential reading is absolute *ex hypothesi*. Whenever an unexpected context presents recalcitrant data, they are forced to deny the intuitive way to do topic-focus articulation and propose some alternative, claiming that how topic-focus partitioning is done depends on the context of utterance. This is incompatible with some of their other theoretical assumptions:

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<sup>5</sup> C & E deal with similar counterexamples by stipulating that in such sentences (with a focused subject BP and an I-predicate which defy an existential reading) the subject has to be a contrastive topic, not a focus. This explanation is not applicable to the current case since world knowledge tells us that ‘being tenured’ is a property that only applies to PhD holders. It makes little pragmatic sense to contrast the BP with alternatives either in a question or in an answer. The only felicitous question is about the existence of PhD holders who are tenured.

following Erteschik-Shir (1997), they hold that “semantic evaluation takes place only after the topic and focus of the sentence have been identified.” If contextual factors are pragmatic in nature, and pragmatic operations are performed not earlier than semantic evaluation, as widely assumed, then it is inconsistent to suggest that topic-focus partition can be context-sensitive. In contrast to its rigidity, the QUD-based account has a straightforward explanation for the contextual effects: it is because the felicity of the existential reading of any focused constituent has to be evaluated relative to the QUD it answers to. If the question asked strongly presupposes the existence of certain individuals, then the existential reading will be highly salient and available. Construing the correlation as a matter of degree apparently makes the right predictions. Let us have another look at example (10), repeated as (11):

- (11)    a. ??PhD holders are tenured.  
           b. Only PhD holders are tenured.  
           c. ?PHD HOLDERS are tenured.  
           d. PhD holders ARE tenured.

Given the intuitive focus-topic articulation, (11b) is a felicitous answer to a QUD along the lines of ‘among what group are there tenured people to the exclusive of its alternatives’; while (11d) is a felicitous answer to a QUD along the lines of ‘among the group of PhD holders, are there tenured people?’. It is obvious that both make an existential reading like salient. (11a), whose surface structure give no cue at all on how topic-focus partition is to be performed, will present the most difficulty even if the hearer tries to accommodate a QUD that inquires about existence. (11c), having potentially ambiguous prosodic cues on topic-focus partitioning, will be marginal, its acceptability lying somewhere in between. Just as focus serves to manage discourse goals by highlighting the line of inquiry which it addresses or the discourse goal it tries to achieve, contrastive-topic marking demonstrates the presence of a grand discourse strategy comprising of a series of related QUDs, with only one serving as the macro-QUD and the others their sub-QUDs. The example below, adapted from Büring (2003), demonstrates the tree-like structure (Discourse trees, or D-trees) the QUD model can be used to describe (the [ ]<sub>F</sub> notation indicates focus marking).

- (12)    Q1: How was the concert?  
           Q2: ... Was the sound good?  
           a2: No, it was [awful]<sub>F</sub>.  
           Q3: How was the band?  
           Q4: ... How was the drummer?  
           a4: [Just fantastic]<sub>F</sub>.  
           Q5: And the singer?  
           a5: [Better than ever]<sub>F</sub>.



- One can tell that the surface form (12)–(13) bears a striking resemblance to example (7)–(8), repeated below as (14)–(15):

- Compared to the explanation given by C & E where the vague ‘aboutness’ property can somehow trump other independently defined syntactic considerations such as argument vs adjunct status of the spatiotemporal argument, the QUD analysis provides an account which is both more intuitive and more tractable. For example, the second part of (15b) can be interpreted as answering to two related questions: ‘what about plates (that make this kitchen awful)’ and ‘what about glasses (that make this kitchen awful)’. These two questions are sub-questions of a max-QUD: ‘what makes this an awful kitchen’? Note that an interlocutor who poses such sub-QUDs typically presupposes the existence of relevant entities (plates and glasses in this case) (Velleman and Beaver 2016). Moreover, since the existence of dirty glasses and broken glasses is sufficient to answer the max-QUD (by individually answering each sub-QUDs), the existential reading of the BP subjects are highly available. Additionally, by taking them to correspond to different sub-QUDs of the same max-QUD, this analysis naturally captures the intuition that the topics of the coordinated clauses are related. Lastly, it shows that holding on to a strict correlation between focus marking and the existential reading of BPs is untenable: both focus marking and contrastive topic marking can augment the availability of the existential reading of a BP more, albeit in different context settings. It is possible then that the underlying factor could be something in common to these two distinct IS notions, such as contrastiveness or saliency of alternatives. An investigation of the exact nature of such a factor, however, is beyond the scope of this paper.

217

## 5 Conclusion

In this paper we have discussed C & E's account on the generic/existential reading alternation of English BPs. It is shown that while the correlation identified is robust, certain assumptions commit the authors to a rather rigid construal of the nature the phenomenon. Since in their framework the definitions of topic and focus have strict syntactic and semantic components, they are forced to stipulate counterintuitive ways to do IS partitions whenever those conditions fail to hold. I argue that, by broadening the perspective to discourse level, a more flexible approach based on questions and answering strategies exhibits both conceptual and empirical superiority.

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