Domain alternatives under focus
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BACKGROUND: This paper discusses the interaction between implicatures and focus, using modal/epistemic indefinites (EIs) as a case study. These are indefinites like Spanish algún, English some, German irgendein, or Italian un qualche and un qualsiasi, which give rise to ignorance or indifference inferences (see e.g. Alonso-Ovalle & Menéndez-Benito 2015 for a recent overview). These inferences have been argued to be akin to implicatures derived on the basis of the domain alternatives that EIs activate (e.g. Chierchia 2013). In this paper, we examine their interaction with focus, with two goals. First, we establish a correlation between the inference triggered by EIs and the possibility to associate with focus. Second, we seek to accommodate the observed patterns in recent alternative-based approaches to EIs, arguing that focus affects lexically activated alternatives, expanding the set of domain alternatives. This allows a better understanding of the variation we find among EIs, as well as of the interaction between implicatures and focus.

DATA OF INTEREST: EIs have been shown to trigger two kinds of modal inferences: (i) Free Choice (FC) requiring that all elements in the quantificational domain qualify as equally possible options (1a), and (ii) Modal Variation (MV), also called partial variation, which imposes the weaker requirement that some, but not necessarily all alternatives in the relevant domain be epistemic possibilities (1b).

(1) a. Prendì una carta qualsiasi!
   ‘Take a card, any card.’
   Free Choice: $\forall x \Diamond \phi$
   b. Maria deve aver sposato un qualche professore.
   ‘Maria must have married some professor, I don’t know who’
   Modal Variation: $\neg \exists x \Box \phi$
   Focusing mainly on Romance data, we discuss two types of EIs and present evidence that EIs that sustain the FC inference can bear focal stress, whereas items that convey MV cannot:

A. UN QUALSIASI type: EIs like Italian un qualsiasi/ French un quelconque/ Romanian un oarecare normally disallow negative polarity uses. However, if they are focused, they can co-occur with downward-entailing (DE) operators such as few or negation, acquiring a ‘not just any’ reading. E.g. the sentences in (2) deny the FC inference and convey that some boys/Gianni read some special book. In the absence of focus, these examples are ruled out.

(2) Pochi ragazzi hanno un libro QUALSIASI/Gianni non ha letto un libro QUALSIASI
   ‘Few boys have read just any book./Gianni hasn’t read any book.’

B. UN QUALCHE type: In contrast to this, EIs like Italian un qualche/ French quelque/ Romanian vreun can never be focused, regardless of whether they occur in a downward-entailing (3a) or modal context (3b). Without focus, these sentences are perfectly acceptable.

(3) a. #Maria deve sposare UN QUALCHE dottore  b. #Nimeni nu a citit VREUN articol
   Maria must marry UN QUALCHE doctor  Nobody not has read VREUN paper

PROPOSAL: Building on recent alternative-based approaches of EIs (Alonso-Ovalle & Menéndez-Benito 2010, Chierchia 2013), we derive the observed patterns from the interaction between lexically activated alternatives and focal alternatives. Our proposal is based on the following independently argued for assumptions:

ASSUMPTION 1: the different modal inferences follow from the consideration of different domain alternatives (Alonso-Ovalle & Menéndez-Benito 2010, Fălăuş 2014). More precisely, we assume that EIs have active domain alternatives, which need to be factored into meaning. Adopting an alternative-and-exhaustification framework (Chierchia 2013), this is done via the same mechanism as the one responsible for scalar implicatures, i.e. the insertion of a covert alternative–sensitive exhaustification operator (akin to only) which leads to the negation of non-entailed alternatives (4).

(4) $O_c(p) = p \land \forall q \subseteq C [q \rightarrow p \subseteq q]$
The set of domain alternatives to which O applies is made of singleton members of the domain D for EIs like un qualche (5a), and of any subdomain of D for un qualsiasi (5b). Exhaustification over these sets of alternatives leads to the (weak) modal variation inference for un qualche and to the (stronger) free choice inference for un qualsiasi:

(5) a. un qualche
\[ \lambda P \exists x \in \{a, b, c\} [P(x) \wedge \text{Q}(x)], u \in D \]

b. un qualsiasi
\[ \lambda P \exists x \in \{\text{D'}[P(x) \wedge \text{Q}(x)] : \text{D'} \subseteq \text{D}\} \]

**ASSUMPTION 2:** Focus leads to the activation of larger domain alternatives than those lexically activated (building on the account of focused wh-phrases in Chinese in Liao 2011). Putting these two assumptions together, we account for cases like (2) as follows. For items that activate D-subdomains of any size, the only way to add domain alternatives (in the presence of focus) is by extending the initial domain. This means that the presence of focus leads to the consideration of a superset of D, namely D' = {a, b, c, d}, and the set of domain alternatives is as in (6b):

(6) a. Ō[¬c[ un libro qualsiasi][ Gianni non ha letto t]]

b. Domain Alternatives: {¬∃x ∈ D'[book(x) ∧ read(Gianni,x)]; D' ⊆ D or D ⊆ D'}

Exhaustification applies to this enlarged set and seeks to eliminate stronger alternatives. In the presence of negation (or any other DE-operator), the lexically activated alternatives are of the form {¬(a ∨ b), ¬(a ∨ c), ¬a, ...}, and are all entailed by the assertion (¬(a ∨ b ∨ c)). Crucially however, the new super-domain alternative is not entailed. This means that through exhaustification, it will be excluded (7).

(7) Ō_0[Gianni didn't read un libro qualsiasi] =
= ¬∃x ∈ D'[book(x) ∧ read(Gianni,x)] ∨ ¬(¬¬∃x ∈ D'[book(x) ∧ read(Gianni,x)]); D' ⊆ D' = (¬∃x ∈ D'[book(x) ∧ read(Gianni,x)]) ∨ (∃x ∈ D'[book(x) ∧ read(Gianni,x)])

According to (7), the sentence in (2) with un libro qualsiasi focused is interpreted as saying that Gianni did not read a book in the initially considered domain of quantification, but he did read a book in some other, special domain (pragmatically determined).

Things are different for un qualche/vreun EIs. In particular, their lexically determined alternatives are different, in that they are restricted to singleton domain alternatives (5a). In the absence of focus, a sentence like (3a), or its equivalent with vreun, is grammatical and triggers a modal/partial variation inference. Once we bring in focus, domain alternatives must be added to the set in (5a). Here however, we can include non-singleton subdomains, amounting to a set of alternatives identical to the one in (5b). But exhaustification over this set would result in the FC inference, a state-of-affairs disallowed by these EIs, which can only trigger MV. Romanian vreun for instance has been argued to encode a ban on FC (Fālăuş 2014). This suggests that focus activated alternatives cannot conflict with the lexical requirements of EIs, explaining why these EIs can never be focused.

We further show that this analysis captures the behavior of German irgendein in modal contexts, which has been shown to be compatible with both MV and FC, but to require focus when it gives rise to the FC reading (Aloni & Port 2010).

**OUTLOOK:** The established correlation between the choice of domain alternatives and focus contributes to the typology of EIs and paves the way for a better understanding of the interaction between lexical and focal alternatives, completing the picture of how various restrictions can interact. Time-permitting, we bring in the picture negative polarity items like ever or any, which can also be focused (Kadmon & Landman 1993, Chierchia 2013) and discuss the connection between our proposal and a recent account of the interaction between scalar implicatures and focus (Fox & Spector to appear).

**Selected References**

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**Chinese wh-exhaustification**

OUP;

Alonso

Selected references discuss the connection between our proposal and a recent account of the interaction between lexical and focal alternatives. Exhaustification over these sets of alternatives contributes to the typology of EIs and provides a natural way to account for cases like (2) as follows. For items that activate D-subdomains of any size, the only way to add domain alternatives (in the presence of focus) is by extending the initial domain. This means that the presence of focus leads to the consideration of a superset of D, namely D' = {a, b, c, d}, and the set of domain alternatives is as in (6b):

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