Towards a unified analysis of modal existential constructions and purpose clauses
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Problem The modal existential wh-construction (MEC; cf. Grosu 2004), (1a), is the last major type of wh-constructions that is still poorly understood. The existing analyses, typically building on analyses of related constructions such as infinitival relatives (Plann 1980), free relatives (Suñer 1983, Caponigro 2003), or embedded wh-questions (Garde 1976, Pancheva-Izvorski 2000), have failed to provide a satisfactory explanation for the cluster of properties that MECs exhibit. The most prominent and cross-linguistically stable properties are: (i) the infinitive (or subjunctive) verbal mood, (ii) the limited modality (exclusively existential force and circumstantial flavor, unlike related infinitival relatives and questions), (iii) the wh-operator-variable dependency, (iv) the limited distribution (MECs appear as arguments of verbs of existence—*be, have,* or verbs that infer existence/visibility/availability—*send, buy, find, appear,* etc.), and (v) the narrow-scope existential construal.

Claim The relative unsuccess of previous analyses can be blamed on the assumption that the MEC is either a "direct object" of the selecting predicate (corresponding to a non-specific DP, (2)) or the only clausal argument of a modal (corresponding to a proposition, (3)). We argue that the MEC is an event-characterizing argument of the existence predicate and its closest kin is not a relative or interrogative, but rather a type of the purpose clause (PC; Faraci 1974), particularly one with a gap bound by an operator, see (1b) and (4).

Event-extension analysis We argue that the predicate of existence (BE) comes in a transitive version, (5), accommodating a *participant argument* (corresponding to the standard nominal pivot of the predicate) and an *event-extension argument*, characterizing an event that the state of existence can lead/extend to. The latter argument is a grammaticalized version of what we call the "possibility implicature" of predicates of existence: *There is a book* implies *The book can be read*; *I found the key* implies *I can open something with that key*; etc. The semantic entry of this predicate, (6), draws on Ramchand's (2008) semantics of atomic (single-participant) events/states which are "extended" ($\rightarrow$) by another (complex or atomic) event. Under this analysis, both the MEC and the PC fill the event-extension argument slot; the participant argument in MECs remains unrealized and is existentially closed, yielding the semantics (7) for (1a).

Deriving the properties The event-extension analysis captures all the properties of MECs mentioned above, while also capturing the essential properties of PCs. Both MECs and PCs appear in the infinitive mood because they participate in the characterization of a complex event (thus, BE relates to the MEC/PC as phase or modal verbs relate to their VP complements). The possibility implicature, of which MECs/PCs are grammaticalizations, is a source of three more properties: the distribution limited to predicates that assert or entail existence, the modality of circumstantial possibility, and the (wh-)operator nature of MECs/PCs; the state of existence of some x leads to the *possibility* (not necessity) for something to happen *with x* (not with some y), and the possibility is restricted by x's existence, which is a *circumstance* of the world (and not, e.g., by a piece of knowledge). Finally, the narrow-scope existential interpretation of the variable bound by the wh-word (a property not shared with PCs) is a result of the participant argument reduction process.

Further support The core assumption of the present hypothesis, namely that the MEC is not an "ordinary" (nominal or clausal) argument, is further supported by the fact that MECs do not exhibit direct object properties, such as case/category-licensing, which would

lead to matching effects *à la* free relatives (notice the wh-PP selected by 'have' in (1a)), or the impossibility to be targeted by passivization, (8).

Theoretical implications The present analysis, if correct, sheds new light on the nature of existential constructions (favoring an event-based analysis of the existence predicate) and, on a more general level, on the relation between syntax and pragmatics (showing that pragmatics can be a direct source of syntactically relevant properties of lexical items).

(1) a. No { tengo /* amo} [$_{MEC}$ con quién$_1$ { bailar /* bailo} t$_1$].
NEG have:1SG / love:1SG with who dance:INF / dance:1SG
'I don't have/love anyone with whom I {could/*have to} dance.'
*'There is somebody with whom I cannot dance.' *Spanish*
b. I bought it [$_{PC}$ OP$_1$ to hang coats on t$_1$].

(2) **Nominal analyses:** I have [$_{MEC}$ with whom$_1$ to dance t$_1$] (pseudo English) ≈
I have [$_{DP}$ a partner]

(3) **Propositional analyses:** I have [$_{MEC}$ where$_1$ to go t$_1$] ≈
It is possible for me [$_{CP}$ to go somewhere]

(4) **Event-extension analysis:** I bought [$_{DP}$ ∅] [$_{MEC}$ on what$_1$ to hang coats t$_1$] ≈
I bought [$_{DP}$ it] [$_{PC}$ OP$_1$ to hang coats on t$_1$]

(5) [$_{BeP}$ [$_{DP}$ participant argument] [$_{Be'}$ BE [$_{vP/CP}$ event-extension argument]]]

(6) $[\![BE]\!] = \lambda w\lambda\mathcal{E}\lambda x\lambda e\exists e',e''[\textbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w)[\mathcal{E}(w')(x)(e'')] \wedge e = e' \rightarrow e'']$ (where x ranges over individuals (type e), e over states and events (type v), w over situations/worlds (type s), and θ over "theta-roles" (type $\langle v, e\rangle$); $\mathcal{E}$ is of type $\langle s, \langle e, vt\rangle\rangle$, the e-type argument being abstracted over by virtue of wh-operator-movement; $C(w)$ is a set of worlds circumstantially accessible from w)

(7) $[\![(1a)]\!] = \lambda w\lambda e\exists x\exists e',e''[\textbf{Exist}(w)(e') \wedge \theta(e') = x \wedge \exists w' \in C(w)[\textbf{Dance.with}(w')(e'') \wedge \theta(e'') = x] \wedge e = e' \rightarrow e'']$ (negation and tense ignored)

(8) *[$_{MEC}$ Con quien platicar]$_1$ no fue encontrado t$_1$ por Julia.
with whom chat:INF NEG was found by Julia
'No one to chat with was found by Julia.' *Spanish*

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