Mood Across Constructions: A Unified Approach[*]

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1. INTRODUCTION

■ Like other Romance languages, (Iberian) Spanish exhibits a contrast between indicative and subjunctive mood in several constructions, including:

- o Mood selection in COMPLEMENTS of attitude verbs   SELECTION
- o Mood alternation in RELATIVE clauses   ALTERNATION
- o Mood alternation in CONDITIONAL clauses   ALTERNATION

■ Mood selection in COMPLEMENTS of attitude verbs (a.k.a. intensional mood):
Some attitude verbs select indicative in their complement clause and some select subjunctive, leading to a grammaticality contrast (Quer 1998, Villalta 2008):

(1) Sofía sabe / piensa / sueña   que Ana planea.IND / *planee.SUBJ un picnic.
Sofia **knows** / **thinks** / **dreams** that Ana plans.**IND**   / *plans.**SUBJ** a picnic
'Sofia knows / thinks / dreams that Ana plans a picnic.'

(2) Sofía quiere / ordena   que Ana *planea.IND / planee.SUBJ un picnic.
Sofia **wants / commands** that Ana *plans.**IND** / plans.**SUBJ** a picnic
'Sofia wants / commands Ana to plan a picnic.'

■ Mood alternation in RELATIVE clauses:
Under subjunctive-selecting verbs, Relative Clauses alternate between indicative and subjunctive, which has been argued to lead to a de re vs. de dicto distinction:

(3) Sofía **quiere** que Ana compre   un libro [que tiene.IND las tapas rojas.
Sofia **wants** that Ana buys.SUBJ a book [that has.**IND** the covers red]
'Sofia wants Ana to buy <u>a specific book</u> that has a red cover.'   ⇨ De re reading

(4) Sofía **quiere** que Ana compre   un libro [que tenga.SUBJ las tapas rojas.
Sofia **wants** that Ana buys.SUBJ a book [that has.**SUBJ**   the covers red]
'Sofia wants Ana to buy <u>some book or other –any would do–</u> that has a red cover.'
⇨ De dicto reading

■ Mood alternation in CONDITIONAL clauses:
If-clauses alternate between indicative and subjunctive, leading to different modal interpretations:

(5)   Si Ana compró.**IND** un libro ayer,   Sofía se alegró.
        If Ana bought.IND   a book yesterday, Sofia SE rejoiced
        'If Ana bought a book yesterday, Sofia was happy.'   ⇨ Epistemic

(6)   Si Ana hubiese.**SUBJ** comprado un libro ayer,   Sofía se habría   alegrado.
        If Ana had.SUBJ   bought   a book yesterday, S.   SE would.have rejoiced
        'If Ana had bought a book yesterday, Sofia would have been happy.'
                                                                      ⇨ Counterfactual

■ As a desideratum, the field aims at a theory of mood that is:
   (i)   valid for a given construction across different languages
            ✤ E.g. Portner & Rubinstein (2020) on 'hope' vs 'want' across Romance
   (ii)   valid across constructions within a given language (in this case, Spanish)
            ✤ Main concern of this talk

■ Point of departure:
After a long tradition (Farkas 1992, Giannakidou 1994, Quer 1998, Villata 2008, among many others), two main approaches to mood in Complement Clauses emerge:

   Approach A: Comparison-based (Giorgi & Pianesi 1997, Portner & Rubinstein 2020)

   Aproach B: Context Set-based (Schlenker 2005, cf. von Fintel 1997, Romero 2017)

■ Goal of this talk:
To combine analytical ingredients from these two approaches to allow for a <u>uniform</u> treatment across the grammar of Spanish:
   o   for mood selection in Complement Clauses of attitude verbs,
   o   for mood alternation in Relative Clauses, and
   o   eventually, for mood alternation in Conditional Clauses

■ Roadmap for the rest of the talk
   §2 Proposal: Combining ingredients ①, ② and ③ from the two main approaches
   §3 Mood selection in Complement Clauses
        §3.1 Deriving the basic selection pattern
        §3.2 Extension to mood in matrix clauses
        §3.3 Motivation of ingredient ①
   §4 Mood alternation in Relative Clauses
        §4.1 Deriving the de re / de dicto pattern
        §4.2 Motivation of ingredient ②
   §5 Mood alternation in Conditional Clauses:
        Sketch of motivation of ingredient ③   ⇦ Just a promissory note!
   §6 Conclusions

2. PROPOSAL: COMBINING INGREDIENTS FROM DIFFERENT ANALYSES

■ Back to our two main approaches to mood in Complement Clauses:

> **Approach A:** Comparison-based (Giorgi & Pianesi 1997, Portner & Rubinstein 2020)
>
> **Aproach B:** Context Set-based (Schlenker 2005, cf. von Fintel 1997, Romero 2017)

■ Our proposal will combine ingredients from both approaches:

① Meaning difference encoded by mood: ⇐ **Approach A**
Indicative is used when the domain of quantification involves one modal background; subjunctive is used when the domain of quantification involves two modal backgrounds.

② Locus of quantification: ⇐ **Approach B**
Quantification over worlds is not introduced by mood itself, but by the attitude verb (or by some left-periphery operator in the embedded clause).

③ Existence of a semantically unmarked form (promissory!):   ⇐ **Approach B**
Indicative mood is more presuppositionally constrained (thus, marked form), whereas subjunctive mood is less presuppositionally constrained (thus, unmarked form).

2.1. Introducing ingredient ①

■ Conversational backgrounds (Kratzer 1991):
A conversational background is a set of propositions (cf. accessibility relation).
Conversational backgrounds come in different flavors: (7).

(7)   Conversational backgrounds:
      $Dox_x(w) =$ the set of propositions that x *believes* in w to be true.
      $Bou_x(w) =$ the set of propositions that x *desires* in w to be(come) true.
      $Deo(w) =$ the set of propositions that conform to *what the law provides* in w.
      $Rpg_x(w) =$ the set of propositions that x *reports* in w to be true.
      $Epi_x(w) =$ the set of propositions that x *knows* in w to be true.
      ...

■ Hintikka-style semantics for belief verbs (Hintikka 1969):
Attitude verbs introduce quantification over the domain of worlds arising from one conversational background, used as MODAL BASE.

(8) $[\![x \ believes \ p]\!]$
      $= \lambda w_0. \ \forall w \in \cap Dox_x(w_0) \ [\ p(w) \ ]$

(9)   Bea **believes** that John teaches Semantics.
      $\lambda w_0. \ \forall w \ [\ w \in \cap \mathbf{Dox}_{bea}(w_0) \ \rightarrow \ John \ teaches \ semantics \ in \ w \ ]$

- Comparative semantics for desire verbs (Heim 1992, Villalta 2008, Romero 2015, a.o.): Besides a MODAL BASE, a second conversational background is used as ORDERING SOURCE to establish a desirability ranking (>) among worlds.

(10) Intuitive idea:
x wants p means
"among x's <u>belief</u> worlds, the most <u>desirable</u> ones are the ones in which p is true".

(11) For any w', w'' ∈ W:
$w' <_{Bou\_x(w0)} w''$ iff   w' is more desirable according to $Bou_x(w_0)$ than w''.

(12) $BEST_{w0}(\cap Dox_x(w_0), Bou_x(w_0))$
= $\{w': w' \in \cap Dox_x(w_0) \wedge \neg \exists v [v \in \cap Dox_x(w_0) \wedge v <_{Bou\_x(w0)} w']\}$
= the set of x's belief worlds that are best according to the ranking by $Bou_x(w_0)$

(13) ⟦*x wants p*⟧
= $\lambda w_0. \forall w \in BEST_{w0}(\cap Dox_x(w_0), Bou_x(w_0)) [p(w)]$

(14) Bea **wants** John to teach Semantics.
$\lambda w_0. \forall w \in BEST_{w0}(\cap \mathbf{Dox}_{bea}(w_0), \mathbf{Bou}_{bea}(w_0)) [$John teaches sem in w $]$

- Ingredient ① of the proposal: $\boxed{\text{SIMPLEX vs. COMPLEX content of e}}$
(adapted from Portner & Rubinstein 2020)

  o Event-relativity of modal backgrounds (Kratzer 2006, Hacquard 2006, a.o.):[1]

(15) Peter believes that p.
$\lambda w_0. \exists e [e<w_0 \wedge believing(e) \wedge Experiencer(e,peter) \wedge \forall w \in Dom(content(e)) [p(w)]]$

(16) Peter wants that p.
$\lambda w_0. \exists e [e<w_0 \wedge wanting(e) \wedge Experiencer(e,peter) \wedge \forall w \in Dom(content(e)) [p(w)]]$

(17) a. If e is a believing event, content(e) is a single background Dox.
b. If e is a wanting event, content(e) is a pair of backgrounds <Dox+, Bou>.

  o Simplex vs complex content of an attitude event e:

(18) For any attitude event e and any modal backgrounds f and h:
a. Content(e) is SIMPLEX iff content(e) consists of a single background f.
b. Content(e) is COMPLEX iff content(e) consists of a pair of backgrounds <f, h>.

  o Building a domain Dom out of content(s):

(19) For any modal backgrounds f and h, any world w and any attitude holder x:
a. $Dom(f_x(w))$ = $\cap f_x(w)$
b. $Dom(<f_x(w), h_x(w)>)$ = $BEST_w(\cap f_x(w), h_x(w))$

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[1] I leave open whether Dom(content(e)) and the ∀w-quantification in (15)-(16) is introduced by the attitude verb itself, as in traditional approaches, or by some left-periphery operator in the embedded clause (Kratzer 2006, Hacquard 2006, a.o.). For the sake of simplicity in this presentation, I will use the former possibility.

2.2. Introducing ingredient ②

■ Standard treatment of personal pronouns:
  A personal pronoun refers to an individual provided that its gender(/number) precondition is satisfied:

(20) $[\![she_2]\!]^g$ is defined only if $g(2)$ is female;
                    if defined, $[\![she_2]\!]^g = g(2)$

■ Pronominal approach to tense (Partee 1973, Kratzer 1998):
  o Similarly, tense morphology has been argued to refer to an temporal interval provided that its temporal precondition is met. That is, tense morphology does not introduce quantification over times, but acts merely as a temporal "pronoun" that can be bound by a temporal operator higher up in the tree: (21)

  o The temporal precondition relates the temporal proform *Past₂* to the anchor time proform *pro₁*. The anchor proform *pro1* may be (co-)bound by the matrix λt_0, as in (22), or by the time of the next attitude verb up the tree, as in (23).

(21) $[\![Past_2{}^{pro1}]\!]^g$ is defined only if $g(2)$ temporally precedes $g(1)$;
                    if defined, $[\![Past_2{}^{pro1}]\!]^g = g(2)$

(22)   Pedro arrived.
       a. LF: $\lambda 0$ [Pedro arrived.$Past_2{}^{pro0}$]
       b. $\lambda t_0.$ $\exists t_2$ [Pedro arrived at t_2 and t_2 precedes t_0]

(23)   Juan said (yesterday) that Pedro arrived.
       a. LF: $\lambda 0$ [Juan said.$Past_1{}^{pro0}$ [that Pedro arrived.$Past_2{}^{pro1}$]]
       b. $\lambda t_0.$ $\exists t_1$ [t_1 precedes t_0 and Juan said at t_1: $\exists t_2$ [Pedro arrived at t_2 and t_2 precedes t_1]]

■ Ingredient ② of the proposal: $\boxed{\text{Pronominal approach to mood}}$ (Schlenker 2005)
  o Similarly, mood morphology refers to a world provided that its "modal" precondition is satisfied. That is, mood morphology does not introduce quantification over worlds, but merely acts as a world "pronoun" that can be bound higher up.

(24)   a. $[\![IND_2{}^{PRO1}]\!]^g$ is defined only if **…???…** ;   [To be revised]
                    if defined, $[\![IND_2{}^{pro1}]\!]^g = g(2)$
       b. $[\![SUBJ_2{}^{PRO1}]\!]^g$ is defined only if **…???…** ;
                    if defined, $[\![SUBJ_2{}^{pro1}]\!]^g = g(2)$

  o The modal precondition relates the world proform *Past₂* to the anchor event proform *pro₁*. The anchor event proform *pro1* may be (co-)bound by the matrix λe_0 of the matrix speech act event e_0, as in (25), or by the event introduced by the next attitude verb up the tree, as in (26) (cf. Hacquard 2013 for modals).

(25)   Pedro arrived.
       a. LF: $\lambda 0$ [Pedro arrived.$IND_2{}^{pro0}$]

(26)   Juan said (yesterday) that Pedro arrived.
       a. LF: $\lambda 0$ [Juan said.$IND_1{}^{pro0}$ [that Pedro arrived.$IND_2{}^{pro1}$]]

- Combining ingredients ① and ② of the proposal:

(27) a. $\llbracket \text{IND}_2\,^{\text{pro1}}\rrbracket^g$ is defined only if content(g(1)) is SIMPLEX and
    $g(2) \in \text{Dom}(\text{content}(g(1)))$;
    if defined, $\llbracket \text{IND}_2{}^{\text{pro1}}\rrbracket^g = g(2)$

   b. $\llbracket \text{SUBJ}_2\,^{\text{pro1}}\rrbracket^g$ is defined only if content(g(1)) is COMPLEX and
    $g(2) \in \text{Dom}(\text{content}(g(1)))$;
    if defined, $\llbracket \text{SUBJ}_2{}^{\text{pro1}}\rrbracket^g = g(2)$ [To be revised]

2.3. Introducing ingredient ③

- Some expressions come in pairs including a presuppositionally heavier and a presuppositionally lighter version:

(28) a. $\llbracket \text{the}\rrbracket^g = \lambda P_{<e,t>}$: there is exactly one x such that P(x). $\lambda Q_{<e,t>}.\ \exists x\ [P(x) \wedge Q(x)]$
   b. $\llbracket \text{a}\rrbracket^g\ \ = \lambda P_{<e,t>}$: ~~there is more than one x such that P(x)~~. $\lambda Q_{<e,t>}.\ \exists x\ [P(x) \wedge Q(x)]$

(29) [Context: S(peaker) meets Felix at a conference, who identifies himself as a PhD student of Maribel. S does not know exactly how many PhD students Maribel has. S says:]
    S: I met a PhD student of Maribel at the conference.

- Maximize presupposition (Heim 1991):

(30) Maximize presupposition: Make your contribution presuppose as much as possible.

(31) [S is a knowledgeable person on earth:]
    a. S: The sun is shining.   b. S: # A sun is shining.

- Ingredient ③ of the proposal: Subjunctive as unmarked: presuppositionally lighter

(32) a. $\llbracket \text{IND}_2\,^{\text{pro1}}\rrbracket^g$ is defined only if **??? ???** ;
    if defined, $\llbracket \text{IND}_2{}^{\text{pro1}}\rrbracket^g = g(2)$

   b. $\llbracket \text{SUBJ}_2\,^{\text{pro1}}\rrbracket^g$ is defined only if ~~**??? ???**~~ ;
    if defined, $\llbracket \text{SUBJ}_2{}^{\text{pro1}}\rrbracket^g = g(2)$ [To be revised]

- Combining ingredients ①, ② and ③ of the proposal:

(33) a. $\llbracket \text{IND}_2\,^{\text{pro1}}\rrbracket^g$ is defined only if content(g(1)) is SIMPLEX and
    $g(2) \in \text{Dom}(\text{content}(g(1)))$;
    if defined, $\llbracket \text{IND}_2{}^{\text{pro1}}\rrbracket^g = g(2)$

   b. $\llbracket \text{SUBJ}_2\,^{\text{pro1}}\rrbracket^g$ is defined only if $g(2) \in \text{Dom}(\text{content}(g(1)))$;
    if defined, $\llbracket \text{SUBJ}_2{}^{\text{pro1}}\rrbracket^g = g(2)$ [Final version]

UPSHOT OF §2

(34) $\llbracket \text{Ana plans.}\textbf{IND}_2{}^{\text{pro1}} \text{ a picnic}\rrbracket^g =$
    λw: content(g(1)) is SIMPLEX and $w \in \text{Dom}(\text{content}(g(1)))$. Ana plans a picnic in w

(35) $\llbracket \text{Ana plans.}\textbf{SUBJ}_2{}^{\text{pro1}} \text{ a picnic}\rrbracket^g =$
    λw: $w \in \text{Dom}(\text{content}(g(1)))$. Ana plans a picnic in w

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3. MOOD SELECTION IN COMPLEMENT CLAUSES

3.1. Deriving the basic selection pattern

■ Verbs selecting an INDICATIVE complement clause in Spanish (Villalta 2008):
- Doxastic/epistemic verbs: e.g. *saber* 'know', *pensar* 'think'
- Verbs of communication: e.g. *decir* 'say'
- Verbs of certainty: e.g. *estar seguro de* 'be certain that'
- Verbs of commitment: e.g. *prometer* 'to promise'.
- Verbs of fiction: e.g. *soñar* 'to dream'.
- Verbs of mental judgement: e.g. *adivinar* 'to guess'
- Perception verbs: e.g. *ver* 'to see'

(36) Sofía sabe / piensa / sueña   que Ana planea.IND / *planee.SUBJ un picnic.
Sofia **knows** / **thinks** / **dreams** that Ana plans.**IND**   / *plans.**SUBJ**   a   picnic
'Sofia knows / thinks / dreams that Ana plans a picnic.'   (=1)

■ Verbs selecting a SUBJUNCTIVE complement clause in Spanish (Villalta 2008):
- Desire verbs: e.g. *querer* 'to want', *temer* 'to fear', *esperar* 'hope'
- Factive-emotive verbs: e.g. *alegrarse de* 'to be glad that', …
- Modal predicates: e.g. *ser possible* 'to be possible'
- Verbs of doubt: e.g. *dudar* 'to doubt'.
- Directive verbs: e.g. *ordenar* 'to order'
- Causative verbs: e.g. *hacer* 'to make (somebody do sth.)'

(37) Sofía quiere / ordena   que Ana *planea.IND / planee.SUBJ un picnic.
Sofia **wants / commands** that Ana *plans.**IND** / plans.**SUBJ**   a   picnic
'Sofia wants / commands Ana to plan a picnic.'   (=2)

■ Empirical generalization:
All subjunctive-selecting verbs involve comparisons via an ordering source h, whereas all indicative-selecting verbs do not invoke an ordering source (Giorgi & Pianesi 1997, Villalta 2008, Portner & Rubinstein 2020):

(38) Indicative-selecting verbs: (Portner & Rubinstein 2020: 355)

Verb	Modal Base f
'believe'	Dox
'know'	Epi
'say'	Rpg (reported Common Ground)
'dream'	Drm (content of the dream)

(39) Subjunctive-selecting verbs: (Portner & Rubinstein 2020: 355)

Verb	Modal Base f	Ordering Source h
'want'	Dox$^+$	Bou
'order'	Rpg	Deo
'regret'	Dox	Bou$^-$
'be probable'	Circ	Ste

- ■ Applying the proposal to a sample **indicative-selecting verb**: 'think'
  - ○ Since 'think' introduces a simplex content of e –namely, $Dox_x(w_0)$–, it suffices to have the IND-proposition (42). ⇨ ✓**IND**
  - ○ Although the SUBJ-proposition (43) could in principle also compose with the attitude verb, Maximize Presupposition (44) demands that presuppositionally heavier (42) be used. ⇨ ***SUBJ**

(40) Sofia thinks that Ana plans.**IND** / ***plans.SUBJ** a picnic.

(41) $[\![think]\!] = \lambda p.\lambda x.\lambda w_0. \exists e\ [\ e<w_0 \wedge thinking(e) \wedge Exp(e,x) \wedge$
$\forall w \in \cap Dox_x(w_0)\ [p(w)]\ ]$

(42) $[\![Ana\ plans.\mathbf{IND}_2{}^{e\_thinking}\ a\ picnic]\!]^g =$
$\lambda w: Dox_x(w_0)\ is\ \text{SIMPLEX}\ and\ w \in \cap Dox_x(w_0).\ Ana\ plans\ a\ picnic\ in\ w$

(43) $[\![Ana\ plans.\mathbf{SUBJ}_2{}^{e\_thinking}\ a\ picnic]\!]^g =$
$\lambda w: w \in \cap Dox_x(w_0).\ Ana\ plans\ a\ picnic\ in\ w$

(44) Maximize Presupposition: Make your contribution presuppose as much as possible!
(Heim 1991)

- ■ Applying the proposal to a sample **subjunctive-selecting verb**: 'want'
  - ○ Since 'want' introduces a complex content of e –namely, $<Dox_x(w_0), Bou_x(w_0)>$–, the presupposition of the IND-proposition (47) is not satisfied. This means that (47) is not defined for any possible world, leading to a presupposition failure when composed with the verb. ⇨ ***IND**
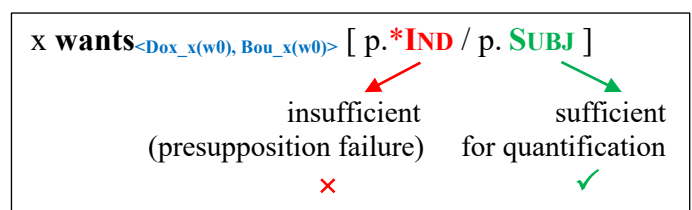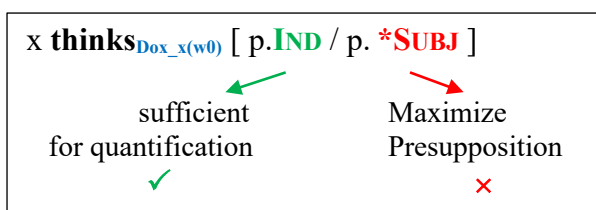 - ○ In contrast, the SUBJ-proposition (48) felicitously composes with the verb. ⇨ **SUBJ**

(45) Sofia wants that Ana ***plans.IND** / plans.**SUBJ** a picnic.

(46) $[\![want]\!] = \lambda p.\lambda x.\lambda w_0. \exists e\ [\ e<w_0 \wedge wanting(e) \wedge Exp(e,x) \wedge$
$\forall w \in BEST_{w0}(\cap Dox_x(w_0), Bou_x(w_0))\ [\ p(w)\ ]\ ]$

(47) $[\![Ana\ plans.\mathbf{IND}_2{}^{e\_wanting}\ a\ picnic]\!]^g =$
$\lambda w: <Dox_x(w_0), Bou_x(w_0)>\ is\ \text{SIMPLEX}\ and\ w \in BEST_{w0}(\cap Dox_x(w_0), Bou_x(w_0)).\ Ana\ plans\ a$
picnic in w

(48) $[\![Ana\ plans.\mathbf{SUBJ}_2{}^{e\_wanting}\ a\ picnic]\!]^g =$
$\lambda w: w \in BEST_{w0}(\cap Dox_x(w_0), Bou_x(w_0)).\ Ana\ plans\ a\ picnic\ in\ w$

UPSHOT OF §3.1

x **thinks**$_{Dox\_x(w0)}$ [p.**IND** / p. ***SUBJ**]	x **wants**$_{<Dox\_x(w0),\ Bou\_x(w0)>}$ [p.***IND** / p. **SUBJ**]
sufficient for quantification ✓ / Maximize Presupposition ✗	insufficient (presupposition failure) ✗ / sufficient for quantification ✓

3.2. Extension to matrix clauses

■ Though matrix clauses usually appear in the indicative, they can also appear in the subjunctive, leading to different types of sentential force (Portner 2018, a.o.):

(49)   Ana planea.IND un picnic.   Statement
         Ana plans.**IND** a picnic
         'Ana plans a picnic.'

(50)   a. Planee.SUBJ un picnic.   Order
          Plan.**SUBJ**   a picnic
           'Plan a picnic.'
        b. Que la Fuerza te acompañe.SUBJ.   Wish
          That the force te.ACC accompanies.**SUBJ**
          'May the Force be with you.'
        c. ¡Que Ana esté.SUBJ despierta tan tarde!   Exclamation (surprise)
          That Ana is.**SUBJ**   awake   so late
          'That Ana be awake so late!

■ Operator analysis of sentential force (Bierwisch 1980, Krifka 2001, 2014; see Portner 2018 for alternatives):

(51)   ASSERT [p.IND]   Statement

(52)   a. COMMAND [p.SUBJ]   Order
        b. DESIRE   [p.SUBJ]   Wish
        c. SURPRISE   [p.SUBJ]   Exclamation (surprise)

■ Applying the proposal to a matrix sentence headed by **ASSERT**:

    o The IND-proposition in (55) is defined for all the worlds that need to be quantified over and thus suffices to carry out the desire quantification.   ⇨ ✓**IND**

    o By Maximize Presupposition, the presuppositionally heavier IND-proposition must be used.   ⇨ ***SUBJ**

(53)   ASSERT [Ana plans.**IND** / *plans.**SUBJ** a picnic].

(54) $[\![ASSERT]\!]$ $= \lambda p.\lambda x.\lambda w_0. \exists e\ [\ e < w_0 \wedge \text{asserting}(e) \wedge \text{Agent}(e,x) \wedge$
                                $\forall w \in \cap Rpg_x(w_0)\ [\ p(w)\ ]\ ]$

(55) $[\![$Ana plans.**IND**$_2{}^{e\text{-asserting}}$ a picnic$]\!]^g =$
       λw: $Rpg_x(w_0)$ is SIMPLEX and $w \in \cap Rpg_x(w_0)$. Ana plans a picnic in w

(56) $[\![$Ana plans.**SUBJ**$_2{}^{e\text{-asserting}}$ a picnic$]\!]^g =$
       λw: $w \in \cap Rpg_x(w_0)$. Ana plans a picnic in w

■ Applying the proposal to a matrix sentence headed by **COMMAND**:

- o Since COMMAND introduces a complex content of e, the presupposition of the IND-proposition (59) is not satisfied and leads to a presupposition failure. ⇨ ***IND**

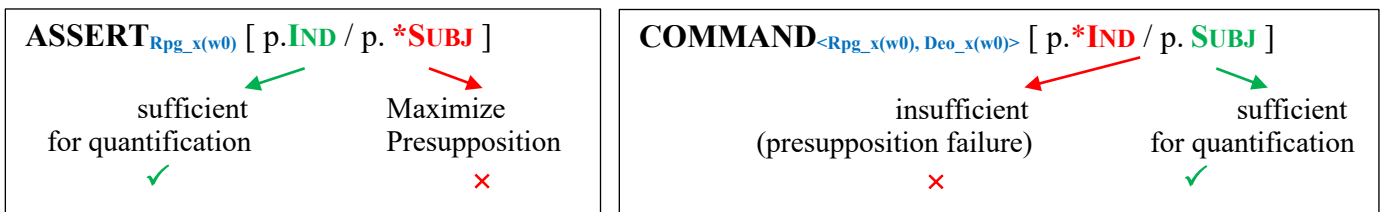- o In contrast, the SUBJ-proposition (60) felicitously composes with the verb. ⇨ **SUBJ**

(57) COMMAND [Ana ***plans.IND** / plans.**SUBJ** a picnic].

(58) $[\![$COMMAND$]\!]$ = $\lambda p.\lambda x.\lambda w_0. \exists e$ [$e < w_0 \wedge$ commanding(e) $\wedge$ Agent(e,x) $\wedge$
$\forall w \in \text{BEST}_{w0}(\cap\text{Rpg}_x(w_0), \text{Deo}_x(w_0))$ [p(w)]]

(59) $[\![$Ana plans.**IND**$_2^{\text{e\_commanding}}$ a picnic$]\!]^g$ =
λw: $<\text{Rgp}_x(w_0), \text{Deo}_x(w_0)>$ is SIMPLEX and $w \in \text{BEST}_{w0}(\cap\text{Rpg}_x(w_0), \text{Deo}_x(w_0))$. Ana plans a picnic in w

(60) $[\![$Ana plans.**SUBJ**$_2^{\text{e\_commanding}}$ a picnic$]\!]^g$ =
λw: $w \in \text{BEST}_{w0}(\cap\text{Rpg}_x(w_0), \text{Deo}_x(w_0))$. Ana plans a picnic in w

UPSHOT OF §3.2

ASSERT$_{\text{Rpg\_x(w0)}}$ [p.**IND** / p. ***SUBJ**]	**COMMAND**$_{<\text{Rpg\_x(w0), Deo\_x(w0)}>}$ [p.***IND** / p. **SUBJ**]
sufficient Maximize for quantification Presupposition ✓ ✗	insufficient sufficient (presupposition failure) for quantification ✗ ✓

3.3. Motivation of Ingredient ①

- For the first ingredient on the meaning difference encoded by mood, we sided with the **approach A**, where IND signals that the referent of the world pronoun is anchored to an attitude event $g(1)$ that invokes a simplex content:

(61) a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g$ is defined only if content($g(1)$) is SIMPLEX and
$g(2) \in$ Dom(content($g(1)$));
if defined, $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g = g(2)$
   b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ is defined only if $g(2) \in$ Dom(content($g(1)$));
if defined, $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g = g(2)$ (=33)

- In contrast, **approach B** anchors the referent of the world pronoun to the local Context Set CS (in the sense of Stalnaker 1984):
   o For matrix clauses, CS $= \cap\{p: p$ is a proposition in the Common Ground$\}$
   o For complement clauses
CS = the great intersection of some representational modal background
$=_{\text{e.g.}} \cap \text{Dox}_x(w_0)$
$=_{\text{e.g.}} \cap \text{Drm}_x(w_0)$
…

(62) a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g$ is defined only if $g(1)$ is a local CS and $g(2) \in g(1)$;
if defined, $[\![\text{Ind}_2{}^{\text{pro1}}]\!]^g = g(2)$
   b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ $g(2)$

- The Context Set-based ingredient ① derives the correct results for:

   o Indicative-selecting verbs

   o Subjunctive-selecting verbs whose lexical semantics operates on a <u>superset</u> of the local CS, e.g. *be happy* in (63) and *want* in (65):

(63) $[\![x \text{ is happy that } p]\!]$
$= \lambda w_0: \forall w \in \cap \text{Dox}_x(w_0) [p(w)].$
$\forall w \in \cap \text{Dox}_x(w_0) [w <_{\text{Bou\_x(w0)}} \text{Sim}_w(\text{rev}_p(\text{Dox}_x(w_0))+\neg p)]$
$=$ presupposes that x believes *p* and
asserts that, for each belief world w of x: w is more desirable than its not-p counterpart world

   ⇨ This counterpart world is outside of the local context set $\cap \text{Dox}_x(w_0)$.
Hence, *alegrarse de* 'be happy that' is correctly predicted to select subjunctive.

(64)   I live in Paris and I want to leave in Paris.

(65) $[\![x\ wants\ that\ p]\!]$ (Heim 1992)

$= \lambda w_0.\ \forall w \in \cap Dox_x(w_0)\ [\ Sim_w(Dox^+_x(w_0)+p)\ <_{Bou\_x(w0)} Sim_w(Dox^+_x(w_0)+\neg p)\ ]$

$=$ for each belief world w of x:

   the most similar world to w where certain beliefs of x and p are true
     is more desirable than
   the most similar world to w where those same beliefs but not p are true

  ⇨ To avoid triviality for statements like (63), only some beliefs of x are used (indicated as $Dox^+_x(w_0)$), not all of them (i.e., not $Dox_x(w_0)$) (Heim 1992, Rubinstein 2017).
  Hence, *querer* 'want' is correctly predicted to select subjunctive (Romero 2012).

■ However, the Context Set-based ingredient ① derives the incorrect results for:

 o Subjunctive-selecting verbs whose lexical semantics operates only on the local CS, e.g. *hope*, *be possible/probable/necessary*:

(66)   # I live in Paris and I hope to leave in Paris.   (Portner & Rubinstein 2020)

(67) $[\![x\ hopes\ that\ p]\!]$ (Heim 1992)

$= \lambda w_0.\ \forall w \in \cap Dox_x(w_0)\ [\ Sim_w(Dox_x(w_0)+p)\ <_{Bou\_x(w0)} Sim_w(Dox_x(w_0)+\neg p)\ ]$

 ⇨ No operation in this lexical entry involves going beyond the local Context Set $\cap Dox_x(w_0)$.
 Hence, *esperar* 'hope' would incorrectly be predicted to select indicative in Spanish under **approach B**.

4. MOOD ALTERNATION IN RELATIVE CLAUSES

4.1. Deriving the de re / de dicto pattern

■ We turn now to the interpretive contrast triggered by mood alternation in Relative Clauses under subjunctive-selecting verbs:

(68) Sofía **quiere** que Ana compre   un libro [que tiene.IND las tapas rojas].   (=3)
    Sofia **wants** that Ana buys.SUBJ a book [that has.**IND** the covers red]
    'Sofia wants Ana to buy <u>a specific book</u> that has a red cover.'   ⇨ De re reading

(69) Sofía **quiere** que Ana compre   un libro [que tenga.SUBJ las tapas rojas].   (=4)
    Sofia **wants** that Ana buys.SUBJ a book [that has.**SUBJ**   the covers red]
    'Sofia wants Ana to buy some book or other –any would do– that has a red cover.'
                                    ⇨ De dicto reading

■ Recall our lexical entries for mood morphology:

(70) a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g$ is defined only if content($g(1)$) is SIMPLEX and
                                $g(2) \in$ Dom(content($g(1)$));
                        if defined, $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g = g(2)$
    b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ is defined only if $g(2) \in$ Dom(content($g(1)$));
                        if defined, $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g = g(2)$ (=33)

■ These lexical entries derive the desired traditional de re / de dicto contrast as follows:[2]
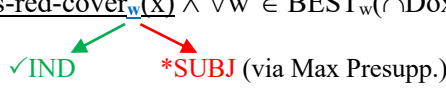
(71)   ASSERT [S wants [that Ana buys.SUBJ a book [$_{RC}$ which has.**IND/SUBJ** red cover]]]

(72) $[\![\text{which}_5 \ t_5 \ \text{has.}\text{IND}_2{}^{\text{pro1}} \text{ a red cover}]\!]^g$
    λx: content($g(1)$) is SIMPLEX and $g(2) \in$ Dom(content($g(1)$)). x has red cover in $g(2)$

(73) $[\![\text{which}_5 \ t_5 \ \text{has.}\text{SUBJ}_2{}^{\text{pro1}} \text{ a red cover}]\!]^g =$
    λx: $g(2) \in$ Dom(content($g(1)$)). x has red cover in $g(2)$

    o Possibility A:
      Assume that $g(2)$ will be <u>bound by the top $\forall w$</u>, leading to the <u>de re reading</u>.
      To successfully allow for this binding, the Relative Clause proposition needs to be
      defined across $\cap \text{Rpg}_x(w_0)$, i.e., across Dom(content(e_{assert})).
      Hence, the anchor $g(1)$ must refer to e_{assert} and content(e) is simplex.

(74) De re reading:
    λw_0. $\forall w \in \cap \text{Rpg}_x(w_0) \ \exists e$ [wanting(e) $\wedge$ Exp(e,sofia) $\wedge$
    $\underline{\exists x \ [\text{book}_w(x)} \wedge \underline{\text{has-red-cover}_w(x)} \wedge \forall w' \in \text{BEST}_w(\cap \text{Dox}_{\text{sofia}}(w), \text{Bou}_{\text{sofia}}(w))$ [Ana buys$_{w'}$ x]]]

            ✓IND   *SUBJ (via Max Presupp.)

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[2] Technically, the proposed lexical entries derive the transparent/opaque contrast, which, according to Quer (1998), is the desired distinction. Also, (74)-(75) are simplified: predications about the attitude event e are omitted.

- Possibility B:
  Assume that $g(2)$ will be <u>bound by the lower $\forall w'$</u>, leading to <u>de dicto reading</u>.
  To successfully allow for this binding, the Relative Clause proposition needs to be defined across $BEST_w(\cap Dox_x(w), Bou_x(w))$, i.e., across $Dom(content(e_{want}))$.
  Hence, the anchor $g(1)$ must refer to e_{want} and $content(e)$ is complex.

(75) De dicto reading:
$\lambda w_0. \forall w \in \cap Rpg_x(w_0)\ \exists e\ [wanting(e) \wedge Exp(e,sofia) \wedge$
$\forall w' \in BEST_w(\cap Dox_{sofia}(w), Bou_{sofia}(w))\ \exists x\ [book_w(x) \wedge \underline{has\text{-}red\text{-}cover_{w'}(x)} \wedge Ana\ buys_{w'}\ x]]$

*IND   ✓SUBJ
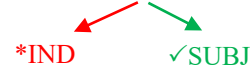
- Crucially, no possibility other than A and B is available. Thus, no other reading.

4.2. Motivation of ingredient ②

■ For the second ingredient on locus of quantification, we took sides with **approach B**, where mood morphology is treated as a pronoun over worlds and does not carry out the quantification itself.

■ In contrast, **approach A** takes mood morphology to be the locus of quantification:

(76) a. $[\![IND_2\,^{pro1}]\!]^g =$ $\lambda p.\ \lambda e$: $content(e)$ consists of a single modal background f.
$\qquad\qquad\qquad\qquad\qquad$ $\forall w \in \cap f\ [p(w)]$

      b. $[\![SUBJ_2\,^{pro1}]\!]^g =$ $\lambda p.\ \lambda e$: $content(e)$ consists of two modal backgrounds g and h.
$\qquad\qquad\qquad\qquad\qquad$ $\forall w \in BEST_s(f, h)\ [\ p(w)\ ]$

■ **Approach A** will derive (near-) de re and de dicto readings as well. However, it would also derive the unattested reading in (78) for the subjunctive version (77) (/69):[3]

(77) Sofia **wants** that Ana buys.SUBJ a book [that has.**SUBJ** red covers]

(78) Unattested reading:
$\lambda w_0. \forall w \in \cap Rpg_x(w_0)\ \exists e\ [wanting(e) \wedge Exp(e,sofia) \wedge$
$\quad\underline{\exists x\ [book_w(x) \wedge \forall w' \in BEST_w(\cap Dox_{sofia}(w), Bou_{sofia}(w))\ [has\text{-}red\text{-}cover_w(x)]} \wedge$
$\qquad\qquad \forall w' \in BEST_w(\cap Dox_{sofia}(w), Bou_{sofia}(w))\ [Ana\ buys_{w'}\ x]\ ]$
'There is a wanting event e by Sophia and there is a book x such that: Sofia wants x to have a red cover and Sofia wants Ana to buy x.'

---

[3] See Alonso-Ovalle, Menéndez-Benito and Rubinstein (2022, 2024) on purpose-like Relative Clauses where another source of quantification is needed.

■ Can we block the unattested reading while maintaining **approach A**?
Alonso-Ovalle, Menendez-Benito & Rubinstein (2024), who also detect some spurious readings predicted by approach A, suggest that SUBJ morphology may follow modal concord, as in (79). They tentatively venture two possibilities to block non-concord structures like (80) within approach A:

- o Economy considerations: one SUBJ operator suffices to license more than one instance of subjunctive morphology.
  ⇨ But this would not stop the grammar of approach A from inserting two SUBJ operators in (77) if the meaning targeted by the speaker were (78). Yet, (77) cannot have this reading.

- o Possible but harder reading: Readings corresponding to non-concord structures like (80) are possible but harder to detect, like negative non-concord readings in Catalan, which are only available with certain prosody (Espinal et al. 2016).
  ⇨ But reading (78) is truly unavailable –prosody does not help.

(79)   Modal Concord structure:
        … SUBJ [… V.subj.morph … V.subj.morph…]

(80)   Modal Non-Concord structure:
        … SUBJ [… V.subj.morph … SUBJ […V.subj.morph…]…]

5. MOOD ALTERNATION IN CONDITIONAL CLAUSES: SKETCH OF MOTIVATION OF INGREDIENT ③

- ■ For the third ingredient, we sided with **approach B** and made SUBJ the unmarked, presuppositionally lighter form:

(81) a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g$ is defined only if content(g(1)) is SIMPLEX and
  $g(2) \in \text{Dom}(\text{content}(g(1)))$;
  if defined, $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g = g(2)$
  b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ is defined only if $g(2) \in \text{Dom}(\text{content}(g(1)))$;
  if defined, $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g = g(2)$ (=33)

- ■ In contrast, **approach A** makes SUBJ as marked / presuppositionally heavy as IND:

(82) a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g =$ $\lambda p.\ \lambda e$: content(e) consists of a single modal background f.
  $\forall w \in \cap f\ [p(w)]$
  b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g =$ $\lambda p.\ \lambda e$: content(e) consists of two modal backgrounds g and h.
  $\forall w \in \text{BEST}_s(f, h)\ [\ p(w)\ ]$

- ■ Mood in conditional clauses (Lewis 1973, von Fintel 1997):

  - o Mood alternation in conditionals leads to an interpretive contrast parallel to the two types of domains under attitudes:[4]

(83) Si Juan fue   a la fiesta ayer,   (pro) la disfrutó.   EPISTEMIC
  If Juan went.**IND** to the party yesterday, (he) it enjoyed
  'If Juan went to the party yesterday, he enjoyed it.'

(84) $\lambda w_0.\ \forall w \in \cap\textbf{Epi(w}_0\textbf{)}\ [\ \text{Juan went}_w \text{ to party} \rightarrow \text{John enjoyed}_w \text{ it}\ ]$

   COUNTERFACTUAL
(85) Si Juan hubiese ido a la fiesta ayer,   la habría disfrutado.
  If Juan had.**SUBJ** gone to the party yesterday, it would.have enjoyed
  'If Juan went to the party yesterday, he enjoyed it.'

(86) $\lambda w_0.\ \forall w \in \textbf{BEST}(\cap\textbf{Cir(w}_0\textbf{), Rea(w}_0\textbf{))}\ [\ \text{Juan went}_w \text{ to party} \rightarrow \text{John enjoyed}_w \text{ it}\ ]^5$

---

[4] 'Fake tense' is necessary but not sufficient to build a counterfactual conditional in Spanish; subjunctive mood is needed as well (Romero 2017).
[5] The semantics of counterfactual conditionals is rendered in a very simplified form in (86).

o Interestingly, in certain pragmatic contexts, the interpretive effect of subjunctive is cancellable: Despite being in the subjunctive, the antecedent proposition in (87) is not understood as contrary-to-fact.

(87)   If Jones had taken arsenic, he would be having right now the symptoms that he is indeed having. (… Hence, he probably took arsenic.)   (Anderson 1951)

(88)   Si Juan hubiese tomado arsénico, tendría   ahora mismo los síntomas
        If Juan had.**SUBJ** taken arsenic,   would.have now   right   the symptoms
        que está teniendo.
        that is having

   ⇨ The lack of counterfactuality in (88) can be derived if SUBJ is presuppositionally lighter, as in **approach B**, and if the effects of Maximize Presupposition can be cancelled in certain pragmatic contexts.[6]

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[6] See Leahy (2011) for a derivation of counterfactuality as a (cancellable) anti-presupposition.

6. CONCLUSIONS

■ Combining the following ingredients from different analyses in the literature, we have proposed the lexical entries in (89) for mood morphology in Spanish:

a. Ingredient ①: The presuppositional constraint is formulated in terms of simplex content of an attitude event e (as in Approach A), not in term of the local context set (as in Approach B).

b. Ingredient ②: Mood introduces a world pronoun (as in Approach B), not quantification over worlds (as in Approach A).

c. Ingredient ③: Subjunctive mood is the unmarked, presuppositionally lighter form (as in Approach B), not as presuppositionally heavy as the Indicative (as in Approach A).

(89)   a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g$ is defined only if content($g(1)$) is SIMPLEX and
$g(2) \in$ Dom(content($g(1)$));
if defined, $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g = g(2)$

b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ is defined only if $g(2) \in$ Dom(content($g(1)$));
if defined, $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g = g(2)$ (=33)

■ The meaning contribution of mood is kept <u>uniform across constructions</u> in the grammar, including:

a. Mood selection by attitude verbs
⇨ Crucial for choice of ingredient ①: 'hope', 'be possible/probable'

b. Mood alternation in Relative Clauses
⇨ Crucial for choice of ingredient ②: de re and de dicto readings but no third reading

c. Mood alternation in Conditional Clauses   A promissory note at this point!
⇨ Crucial for choice of ingredient ③, for future work: non-counterfactual interpretation of subjunctive-marked conditionals in certain pragmatic contexts

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