Mood across constructions: a unified approach[*]

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Abstract The present paper provides a uniform treatment of mood morphology across constructions in Spanish, including: (a) mood selection in complement clauses of attitude verbs and in matrix clauses, (b) mood alternation in relative clauses and, tentatively, (c) mood alternation in conditional clauses. We argue for the following combination of ingredients from different approaches: (i) mood tracks the modal architecture of the embedding verb, not the local context set; (ii) mood introduces a world pronoun, not world quantification; and (iii) indicative mood is presuppositionally heavier than subjunctive mood.

Keywords: mood, subjunctive, complement clause, relative clause, conditionals

1 Introduction

Like other Romance languages, (Iberian) Spanish exhibits a contrast between indicative and subjunctive mood in several constructions, including mood selection in complements of attitude verbs, mood alternation in relative clauses and mood alternation in conditional clauses.

In complement clauses, attitude verbs like *saber* 'know' and *pensar* 'think' select indicative (IND) in their complement clause, whereas verbs like *querer* 'want' and *ordenar* 'command' select subjunctive (SUBJ), leading to a grammaticality contrast (Quer 1998; Villalta 2008):

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

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

Relative clauses, when embedded under subjunctive-selecting verbs, alternate between indicative and subjunctive. This alternation has been argued to (roughly) correspond to the de re / de dicto distinction: Indicative enforces the de re reading, as in (3), while subjunctive secures the de dicto reading, as in (4).[1]

(3)   Sofía quiere que Ana compre   un libro [que tiene   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 red covers.'

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

Finally, in conditionals, *if*-clauses alternate between indicative and subjunctive, leading to different modal interpretations. The indicative conditional in (5) receives an epistemic interpretation while the subjunctive conditional in (6) is (typically) interpreted counterfactually:

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

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

As a desideratum, the field aims at a theory of mood that is, on the one hand, valid for a given construction across different languages (cf. Portner & Rubinstein 2020 on 'hope' vs. 'want' across Romance) and, on the other, valid across different constructions within the same language. The latter desideratum will be the main concern of the present talk.

After a long tradition (Farkas 1992; Giannakidou 1994; Quer 1998; Villalta 2008; a.o.), two main approaches to mood in complement clauses have emerged: an approach based on modal architecture (Giorgi & Pianesi 1997; Portner & Rubinstein 2020), which we label approach A, and an approach based on context sets (Schlenker 2005; cf. von Fintel 1998, Romero 2017), which we label approach B. The goal of the present paper is to combine analytical ingredients from these two approaches to allow for a *uniform* treatment of mood across the grammar of Spanish, including these constructions: (a) mood selection in complement clauses and matrix clauses, (b) mood alternation and de re/de dicto readings in relative clauses, and (c), as a promissory note, mood alternation in conditional clauses.

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[1] More accurately, mood alternation in relative clauses corresponds to the transparent/opaque distinction (Quer 1998). For simplicity, for the relevant Noun Phrases, we will keep the scope of the quantifier and the world evaluation of the N' restrictor aligned.

The paper is organized as follows. Section 2 presents the proposal, with three key ingredients. Ingredient ① bears on the meaning difference encoded by mood; ingredient ② is concerned with the locus of world quantification; and ingredient ③ posits the existence of an unmarked form. Section 3 applies the proposed analysis to mood selection in complement clauses, extends it to matrix clauses and to complements of communication verbs, and motivates the choice of ingredient ①. Section 4 applies the proposal to de dicto and de re readings of relative clauses and motivates the choice of ingredient ②. Section 5 revisits conditional clauses and briefly sketches a motivation for the choice of ingredient ③. Section 6 concludes.

2 Proposal: Combining ingredients from different analyses

Our point of departure is the two aforementioned approaches to mood selection in complement clauses: approach A (Giorgi & Pianesi 1997; Portner & Rubinstein 2020) and approach B (Schlenker 2005; cf. von Fintel 1998 and Romero 2017). In a nutshell, our proposal argues for the following combination of ingredients.

For ingredient ①, we agree with approach A and maintain that the meaning **difference encoded by mood** relates to the architecture of the relevant domain of world quantification. More concretely, indicative is used when the domain of quantification involves one modal background, used as Modal Base, whereas subjunctive is used when the domain of quantification involves two modal backgrounds, one used as Modal Base and one as Ordering Source.

For ingredient ② on the **locus of quantification**, we argue that quantification over worlds is not introduced by mood itself, but by the attitude verb (or by some left-periphery operator in the complement clause). Here we align with approach B and distance ourselves from current implementations of approach A.

Finally, for ingredient ③, we assume with approach B –though we cannot fully motivate it here– that mood morphology is meaning-wise **asymmetrical**: Indicative mood is presuppositionally more constrained, hence acting as the marked form, whereas subjunctive mood is presuppositionally less constrained, thus serving as the unmarked form.

In the remainder of this section, we formally introduce each ingredient in turn.

2.1 Introducing ingredient ①

According to a long semantic tradition (Hintikka 1969; Stalnaker 1984), the lexical meaning of attitude verbs is built using modal (a.k.a. conversational) backgrounds. A modal background, accessed from a given world w, is a set of propositions (Kratzer 1991). Depending on the type of propositions accessed, different modal flavors result, as in (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 the *law* in w.
$Rpg_x(w) =$ the set of propositions that x *reports* in w to be true.

The literature distinguishes (at least) two semantic templates for the internal make-up of attitude verbs. On the one hand, some attitude verbs introduce quantification over a domain of worlds arising from a single conversational background, used as Modal Base (MB). This corresponds to Hintikka-style semantics for attitudes, defined and illustrated here for *believe* (Hintikka 1969):

(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]

On the other hand, some attitude verbs have been argued to have a more nuanced modal architecture which, besides using a modal background as MB, includes a second modal background as Ordering Source (OS) in order to establish a ranking among worlds. This corresponds to the Stalnaker-Heim semantics assigned to e.g. desire verbs (Stalnaker 1984; Heim 1992; see also Villalta 2008 and Romero 2015), intuitively rendered in (10), formally defined in (11-13) and illustrated in (14):[2]

(10)   *x wants p* intuitively means
     "among x's <u>belief</u> worlds, the most <u>desirable</u> 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 in w_0 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]

Following Portner and Rubinstein 2020 from approach A, we propose that the indicative/subjunctive distinction in Spanish tracks the modal architecture of the quantificational domain introduced by the embedding attitude verb: When the

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[2] There are different variants of the Stalnaker-Heim approach, all having in common the use of a MB and an OS. For the purposes of the present paper, the formulation in (13) suffices.

attitude verb employs a single modal background as MB (à la Hintikka), indicative is selected; when the attitude verb combines two modal backgrounds as MB and OS (à la Stalnaker and Heim), subjunctive is selected.

We implement this idea as follows. First, modal backgrounds are anchored to events (Kratzer 2006; Hacquard 2006; a.o), so that every attitude verb introduces an event *e* which invokes some modal content, *content(e)*. For example, the verb *believe* introduces a believing event in (15), which invokes a single modal background Dox as its modal content, as in (17a); in contrast, the verb *want* introduces a wanting event, which invokes the pair of backgrounds <Dox+, Bou> as its modal content, as in (17b):[3]

(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 <Dox+, Bou>.

Second, we define content(e) as simplex if it consists of a single modal background and as complex if it consists of a pair of modal backgrounds:

(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 background pair <f, h>.

Finally, out of content(e), the corresponding domain *Dom* of quantification is constructed: A simplex content(e) consisting solely of a modal background f builds a domain à la Hintikka, as in (19a), whereas a complex content(e) consisting of a pair <f,h> builds a domain à la Stalnaker and Heim, as in (19b):

(19) For any modal backgrounds f and h, world w and attitude holder x:

    a. $\text{Dom}(f_x(w))$ $=$ $\cap f_x(w)$

    b. $\text{Dom}(<f_x(w), h_x(w)>) =$ $\text{BEST}_w(\cap f_x(w), h_x(w))$

As we will see, our lexical entries for mood morphology will track the simplex/complex dichotomy in (18): Indicative will be used when content(e) is simplex and subjunctive when content(e) is complex.

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[3] I leave open whether the $\forall w$-quantification in (15-16) is introduced by the attitude verb itself, as in traditional approaches, or by some left-periphery operator in the complement clause. For the sake of concreteness, I will use the former possibility. Nothing hinges on this choice.

2.2   Introducing ingredient ②

It is standardly assumed that a personal pronoun refers to an individual, provided that its gender(/number) presupposition is satisfied (Heim & Kratzer 1998):

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

Tense morphology has received a parallel pronominal approach (Partee 1973; Kratzer 1998): Tense refers to a temporal interval provided that its temporal presupposition is satisfied, as in (21). This means that 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. Additionally, the temporal precondition relates the temporal proform *PAST_2* to the anchor time proform *pro_1*. This 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) $[\![\text{PAST}_2{}^{\text{pro1}}]\!]^g$ is defined only if g(2) temporally precedes g(1);
            if defined, $[\![\text{PAST}_2{}^{\text{pro1}}]\!]^g = g(2)$

(22)   Pedro arrived.
        a. LF: $\lambda 0$ [Pedro arrived.$\text{PAST}_2{}^{\text{pro0}}$]
        b. λt_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.$\text{PAST}_1{}^{\text{pro0}}$ [that Pedro arrived.$\text{PAST}_2{}^{\text{pro1}}$]]
        b. λt_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]]

Following Schlenker 2005 from approach B, ingredient ② of our proposal is a pronominal approach to mood: Mood morphology refers to a world provided that its modal presupposition –written as ??? for the time being– is satisfied, as in (24). This means that, similar to tense, mood morphology does not introduce quantification over worlds, but merely acts as a world "pronoun" that can be bound higher up. Furthermore, the modal precondition will relate the world proform *IND_2/SUBJ_2* to the anchor event proform *pro_1*. This anchor event proform *pro* 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 2010 for modals):

(24)   a. $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g$ is defined only if …???… ;
                    if defined, $[\![\text{IND}_2{}^{\text{pro1}}]\!]^g = g(2)$
        b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ is defined only if …???… ;
                    if defined, $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g = g(2)$ [To be revised]

(25)   Pedro arrived.
        LF: $\lambda 0$ [Pedro arrived$_{e1}$.IND$_2^{pro0}$]

(26)   Juan said (yesterday) that Pedro arrived.
        LF: $\lambda 0$ [Juan said$_{e1}$.IND$_3^{pro0}$ [that Pedro arrived.IND$_2^{pro1}$]]

We can now combine ingredients ① and ② of the proposal. To the pronominal template (24), we add presuppositions based on the simplex/complex dichotomy: Indicative presupposes that the modal content of the anchor event g(1) is simplex while subjunctive presupposes that it is complex, as in (27):

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

2.3 Introducing ingredient ③

Some expressions come in pairs including a presuppositionally heavier and a presuppositionally lighter version. For example, while the definite *the* presupposes (existence and) uniqueness, as in (28a), the indefinite *a*, defined in (28b), does not presuppose anti-uniqueness, as the felicity of example (29) shows:

(28)   a. $[\![the]\!]^g = \lambda P_{<e,t>}: |\{x:P(x)\}| = 1. \lambda Q_{<e,t>}. \exists x [P(x) \wedge Q(x)]$
        b. $[\![a]\!]^g\ \ = \lambda P_{<e,t>}: \cancel{|\{x:P(x)\}| > 1}. \lambda Q_{<e,t>}. \exists x [P(x) \wedge Q(x)]$

(29)   [Context: S meets Felix, 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.

However, under the right conditions and driven by Heim's (1991) Maximize Presupposition in (30), the indefinite article *a* leads to unacceptability when (the anti-presupposition of) anti-uniqueness is not contextually satisfied, as illustrated in (31):

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

(31)   [S and A are knowledgeable people on earth. S tells A:]
        The / # A sun is shining.

Following Schlenker 2005 from approach B, ingredient ③ of our proposal makes the two moods presuppositionally asymmetrical: Indicative is presuppositionally heavier and subjunctive is presuppositionally lighter. More concretely,

combining ingredients ①, ② and ③, we propose the lexical entries in (32):

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

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

When combined with the rest of the clause, our mood lexical entries will make the proposition expressed by its clause partial. But, while subjunctive will make it partial in that it will only be defined for the worlds in the intended quantificational domain –a quite innocuous constraint–, as in (34), indicative will additionally require that this domain be construed out of a simplex content(e), as in (33):

(33) $[\![2[\text{Ana plans.}\mathbf{IND}_2{}^{\mathrm{pro1}}\text{ a picnic}]]\!]^g =$
λw: content(g(1)) is SIMPLEX and $w \in \mathrm{Dom}(\mathrm{content}(g(1)))$. Ana plans a picnic in w

(34) $[\![2[\text{Ana plans.}\mathbf{SUBJ}_2{}^{\mathrm{pro1}}\text{ a picnic}]]\!]^g =$
λw: $w \in \mathrm{Dom}(\mathrm{content}(g(1)))$. Ana plans a picnic in w

In the upcoming sections, we will apply the proposed analysis to complement and matrix clauses (§2), to relative clauses (§3) and to conditional clauses (§4). We will see how the choice of ingredients ①, ② and ③ derives the desired empirical patterns and why the opposite choice of ingredients would lead to wrong results.

3 Mood in complement clauses and in matrix clauses

3.1 Deriving the basic selection pattern in complement clauses

Verbs selecting an indicative complement clause in Spanish include the following (Villalta 2008): doxastic/epistemic verbs (e.g., *saber* 'know', *pensar* 'think'), as we saw in (1); verbs of certainty (e.g. *estar seguro de* 'be certain that'); verbs of commitment (e.g. *prometer* 'promise'); verbs of fiction (e.g. *soñar* 'dream'); verbs of mental judgement (e.g. *adivinar* 'guess'); and perception verbs (e.g. *ver* 'see'). Verbs selecting a subjunctive complement clause in Spanish comprise the following (Villalta 2008): desire verbs (e.g., *querer* 'want', *esperar* 'hope'), illustrated in (2); directive verbs (e.g. *ordenar* 'order'), as in (2); factive emotive verbs (e.g. *alegrarse de* 'be glad that'); modal predicates (e.g. *ser possible* 'be possible'); verbs of doubt (e.g. *dudar* 'doubt'); and causative verbs (e.g. *hacer* 'make somebody do something').

Building on Giorgi and Pianesi 1997 and Villalta 2008, Portner and Rubinstein (2020) propose the following empirical generalization: Indicative-selecting verbs

do not invoke an ordering source in their modal architecture –that is, they have simple Hintikka-style semantics–, whereas subjunctive-selecting verbs involve comparisons via an ordering source h –hence, they follow Stalnaker-Heim semantics.

The present proposal, crucially invoking the simplex/complex dichotomy as ingredient ① in the spirit of approach A, derives the desired selection pattern as follows. Let us start with indicative-selecting verbs, illustrated here with *pensar* 'think'. The verb's lexical entry is provided in (35) and its selectional template is recalled in (36). Consider now the two potential complement propositions (37) and (38), where the anchor proform pro_1 is mapped to the thinking event e introduced by the selecting verb. Since a thinking e involves a simplex modal content –namely, $Dox_x(w_0)$–, it suffices to have the indicative proposition (37), thus making indicative grammatical. In contrast, despite the fact that the subjunctive proposition (38) could in principle also compose with the attitude verb, Heim's (1991) Maximize Presupposition in (30) demands that the presuppositionally heavier (37) be used, hence rendering subjunctive unacceptable:[4]

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

(36) Sofia thinks [that Ana ✓plans.IND / *plans.SUBJ a picnic].

(37) $[\![2[Ana\ plans.IND_2{}^{pro1}\ a\ picnic]]\!]^{g\_thinking/1}$ =
$\lambda w{:}\ Dox_x(w_0)$ is SIMPLEX and $w \in \cap Dox_x(w_0)$. Ana plans a picnic in w

(38) $[\![2[Ana\ plans.SUBJ_2{}^{pro1}\ a\ picnic]]\!]^{g\_thinking/1}$ =
$\lambda w{:}\ w \in \cap Dox_x(w_0)$. Ana plans a picnic in w

We turn to subjunctive-selecting verbs, illustrated here with *querer* 'want'. The lexical entry of the verb is given in (39) and its selection pattern in (40). The two potential complement propositions are spelled out in (41-42), with the anchor proform pro_1 mapped to the wanting event e introduced by the selecting verb. Since a wanting event is associated with a complex modal content –namely, $<Dox^+{}_x(w_0)$, $Bou_x(w_0)>$–, the presupposition of the indicative proposition (41) is not satisfied. More concretely, (41) is not defined for any possible world, leading to a presupposition failure when composed with the embedding verb. In contrast, the subjunctive proposition (42) is defined for all the worlds that the embedding verb quantifies over and thus successfully composes with it.

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

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[4] Subjunctive in (36) does not lead to infelicity, as in the case of (31), but to ungrammaticality. This can be derived from logical triviality (Gajewski 2002) once pragmatic inferences –in this case, anti-presuppositions– are factored into the logical skeleton (Qing & Uegaki 2024).

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

(41) $[\![2[\text{Ana plans.IND}_2{}^{\text{pro1}} \text{ a picnic}]\!]^{g^{e}\_{\text{wanting}/1}} =$
λw: <$\text{Dox}_x(w_0)$, $\text{Bou}_x(w_0)$> is SIMPLEX and w ∈ $\text{BEST}_{w0}(\cap\text{Dox}^+{}_x(w_0)$,
$\text{Bou}_x(w_0))$. Ana plans a picnic in w

(42) $[\![2[\text{Ana plans.SUBJ}_2{}^{\text{pro1}} \text{ a picnic}]\!]^{g^{e}\_{\text{wanting}/1}} =$
λw: w ∈ $\text{BEST}_{w0}(\cap\text{Dox}^+{}_x(w_0)$, $\text{Bou}_x(w_0))$. Ana plans a picnic in w

In sum, when the attitude verb projects a simplex modal content, the indicative proposition suffices and Maximize Presupposition blocks the subjunctive option; thus, indicative is selected. When the attitude verb invokes a complex modal content, the indicative proposition is undefined for any world and only the subjunctive proposition composes successfully; hence, subjunctive is selected.

3.2 Extension to matrix clauses: Mood and sentential force

Though matrix clauses usually appear in the indicative, they may also appear in the subjunctive. Mood partly determines sentential force (Portner 2018; a.o.). Declarative statements appear in the indicative, as in (43), whereas commands (in third person), wishes and certain exclamatives bear subjunctive, see (44):

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

(44) a. Planee   un picnic.   Command
Plan.SUBJ a picnic
'Plan a picnic.'

b. Que la Fuerza te   acompañe.   Wish
That the force   you.ACC accompanies.SUBJ
'May the Force be with you.'

c. ¡Que Ana esté   despierta tan tarde!   Exclamation (surprise)
That Ana is.SUBJ awake   so   late
'That Ana be awake so late!'

For concreteness, we adopt an operator analysis of sentential force (Bierwisch 1980; Krifka 2001, 2014; see Portner 2018 for alternatives), sketched in (45-46):

(45) ASSERT [p.IND]   Statement

(46)   a. COMMAND [p.SUBJ]   Command

b. DESIRE   [p. SUBJ]   Wish

c. SURPRISE   [p. SUBJ]   Exclamation (surprise)

The present proposal derives the mood and sentential force pattern in a way parallel to mood selection in complement clauses. Starting with statements, the operator ASSERT evokes a simplex modal content, as in (47). The indicative proposition (48) is defined for all the worlds that ASSERT quantifies over and thus suffices to carry out the desire quantification; the subjunctive proposition (49), though also composable, is ruled out by Maximize Presupposition.

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

(48) $[\![2[\text{Ana plans.IND}_2{}^{\text{pro1}}\text{ a picnic}]]\!]^{g^{e\_\text{asserting}/1}} =$
$\lambda w\text{: Rpg}_x(w_0)$ is SIMPLEX and $w \in \cap\text{Rpg}_x(w_0)$. Ana plans a picnic in w

(49) $[\![2[\text{Ana plans.SUBJ}_2{}^{\text{pro1}}\text{ a picnic}]]\!]^{g^{e\_\text{asserting}/1}} =$
$\lambda w\text{: } w \in \cap\text{Rpg}_x(w_0)$. Ana plans a picnic in w

In contrast, the operator COMMAND in (50) –and similarly WISH and SURPRISE– evokes a complex modal content. This makes the indicative proposition (51) undefined for any world, leading to presupposition failure, while the subjunctive proposition (52) successfully composes with the force operator:

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

(51) $[\![2[\text{Ana plans.IND}_2{}^{\text{pro1}}\text{ a picnic}]]\!]^{g^{e\_\text{commanding}/1}} =$
$\lambda w\text{: } <\text{Rgp}_x(w_0), \text{Deo}_x(w_0)>$ 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

(52) $[\![2[\text{Ana plans.SUBJ}_2{}^{\text{pro1}}\text{ a picnic}]]\!]^{g^{e\_\text{commanding}/1}} =$
$\lambda w\text{: } w \in \text{BEST}_{w0}(\cap\text{Rpg}_x(w_0), \text{Deo}_x(w_0))$. Ana plans a picnic in w

3.3 Mood alternation in complement clauses under communication verbs

Certain communication verbs, e.g. *decir* 'say', *gritar* 'scream' and *susurrar* 'whisper', can be used to report speech events of varying sentential force. Interestingly, the mood in their complement clause signals what type of speech event is being reported (Ridruejo 1999): (53) with indicative reports a statement while (54) with subjunctive reports a directive (e.g., a command or suggestion):

(53) Sofía dijo que Ana planeaba   un picnic.
Sofia said that Ana planned.IND a   picnic
'Sofia said that Ana was planning a picnic.'

(54) Sofía dijo que Ana planease   un picnic.
Sofia said that Ana planned.SUBJ a   picnic
'Sofia commanded/suggested for Ana to plan a picnic.'

This pattern follows straightforwardly from our treatment of mood if the modal content of these communication verbs is underspecified. In other words, *decir* 'say' lexically introduces a saying event e without fully specifying e's modal content. Mood acts, then, as a partial disambiguator. Just like the presupposition of *her* in (55) informs the hearer that all the (relevant) friends of the speaker are female, so does mood choice communicate that the reported saying event is a statement –by invoking the simple modal content $\text{Rpg}_x(w_0)$ in (53)– or that it is a directive –by invoking the complex modal content $<\text{Rpg}_x(w_0), \text{Deo}_x(w_0)>$ in (54).

(55)   Every friend$_1$ of mine brought her$_1$ dog.

3.4 Motivation of ingredient ①

For ingredient ① on the meaning difference encoded by mood, we sided with approach A, where indicative carries the presupposition that the anchor proform *pro$_1$* refers to an attitude event that invokes a simplex content, as we saw in (32). In contrast, approach B takes indicative to presuppose that the referent $g(2)$ of the world pronoun belongs to the local context set CS, in the sense of Stalnaker 1984. For matrix clauses, the local CS equals $\cap$\{p: p is a proposition in the Common Ground\}. For complement clauses, the local CS equals the great intersection of some representational modal background –typically, the Modal Base– introduced by the embedding verb, e.g. $\cap\text{Dox}_x(w_0)$ for *think* and *be happy*. If we had sided with approach B for this ingredient, the lexical entries would have been defined as in (56):

(56)   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 indicative-selecting verbs. It also derives the correct selection pattern for subjunctive-selecting verbs whose lexical semantics operates on a <u>superset</u> of the local CS, e.g. *want* and *be happy*. For example, in the case of *want*, to avoid triviality for statements like (57), it has been argued that *want* operates on an expanded version $\cap\text{Dox}^+_x(w_0)$ of $\cap\text{Dox}_x(w_0)$ in which certain beliefs have been suspended (Heim 1992; Rubinstein 2017). Roughly, *x wants p* asserts that, 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 ¬p are true, as formalized in (58). This means that p needs to be defined beyond the local context set $\cap\text{Dox}_x(w_0)$ and, thus, that subjunctive but not indicative must be used (Romero 2013).[5]

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[5] For emotive factives like *be happy* under approach B, see Schlenker 2005 and Romero 2017.

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

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

However, the context set-based ingredient ① derives the incorrect results for subjunctive-selecting verbs whose lexical semantics strictly operates on the local CS, e.g. *hope* and *be possible/probable/necessary*. For example, based on the infelicity of (59), *hope* has been argued to operate only on $\cap Dox_x(w_0)$ and not on the expanded version $\cap Dox^+_x(w_0)$ (Portner & Rubinstein 2020), as in (60). Since no operation in (60) involves going beyond the local context set $\cap Dox_x(w_0)$, the approach B version of ingredient ① would incorrectly predict *esperar* 'hope' to select indicative in Spanish.

(59) # I live in Paris and I hope to leave in Paris.

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

To summarize section 3, we have seen that the proposed lexical entries derive the mood selection pattern in complement clauses, the correlation between mood and sentential force in matrix clauses and the corresponding mood alternation in complements of communication verbs. Key to this derivation is our choice of ingredient ①. The simplex/complex dichotomy correctly predicts *hope* and *be possible/probable/necessary* to select subjunctive in Spanish, while the context set-based entries would wrongly predict them to select indicative.

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. As we illustrated in (3-4), indicative enforces the de re reading whereas subjunctive secures the de dicto reading. The mood entries proposed in (32) straightforwardly derive this pattern, as follows.

Examples (3) and (4) have the underlying structure in (61a). There are two sources of world quantification in this structure: the force operator ASSERT, introducing $\forall w \in \cap Rpg_x(w_0)$ in the (incomplete) formula (61b), and the attitude verb *want*, introducing $\forall w' \in BEST_w(\cap Dox_{sofia}(w)$. The choice of indicative in the relative clause results in the denotation (62) and the choice of subjunctive in (63):

(61) a. ASSERT [Sofia wants.IND [that Ana buys.SUBJ a book [$_{RC}$ which
has.IND$_2$^{pro1}/SUBJ$_2$^{pro1} red cover]]]

b. $\lambda w_0. \forall w \in \cap Rpg_x(w_0) \exists e \ [e<w_0 \wedge \text{wanting}(e) \wedge \text{Exp}(e,\text{sofia}) \wedge$
$\forall w' \in \text{BEST}_w(\cap Dox_{\text{sofia}}(w), \text{Bou}_{\text{sofia}}(w)) \ [\text{Ana buys}_{w'} \ …]]$

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

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

Now we need to determine which world quantifier will bind $g(2)$ in the relative
clause and which mood will be used to express it. Since, as we saw, there are only
two instances of quantification over worlds in (61b), there are only two binding
possibilities. Let us examine them in turn.

First, $g(2)$ may be bound by the top $\forall w$ introduced by ASSERT, leading to the
de re reading in (64). To successfully allow for this binding, the relative clause
proposition needs to be defined throughout the domain of its binder, that is,
throughout $\text{Dom}(\text{content}(e_{\text{assert}}))$. This means that the anchor $g(1)$ must refer to e_{assert}
and, since $\text{content}(e_{\text{assert}})$ consists solely of $Rpg_x(w_0)$, $\text{content}(e_{\text{assert}})$ is simplex.
Consequently, for the intended binding, the indicative denotation in (62) suffices
and, by Maximize Presupposition, the subjunctive denotation in (63) is blocked.
Hence, the de re reading of the relative clause requires indicative.

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

Second, $g(2)$ may be bound by the lower $\forall w'$ introduced by *want*, leading to de
dicto reading in (65). To successfully allow for this binding, the relative clause
proposition needs to be defined throughout $\text{Dom}(\text{content}(e_{\text{want}}))$. Hence, the anchor
$g(1)$ must refer to e_{want} and, since $\text{content}(e_{\text{want}})$ equals $<Dox^+_x(w), \text{Bou}_x(w)>$,
$\text{content}(e_{\text{want}})$ is complex. As a result, the indicative denotation (62) will not be
defined for any individual, leading to a presupposition failure when composed with
the rest of the sentence. In contrast, the subjunctive denotation (63) perfectly
composes with the rest. Hence, the de dicto reading requires subjunctive.

(65) De dicto reading:
$\lambda w_0. \forall w \in \cap Rpg_x(w_0) \ \exists e \ [e<w_0 \wedge \text{wanting}(e) \wedge \text{Exp}(e,\text{sofia}) \wedge$
$\forall w' \in \text{BEST}_w(\cap Dox_{\text{sofia}}(w), \text{Bou}_{\text{sofia}}(w)) \ \underline{\exists x \ [\text{book}_{w'}(x) \wedge \text{has-red-cover}_{w'}(x)}$
$\wedge \text{Ana buys}_{w'} \ x]]$

Since no other world quantification possibility arises in (61b), no other reading is derived.[6]

4.2. Motivation of ingredient ②

For ingredient ② on the locus of quantification, we took sides with approach B, where mood morphology is treated as a pronoun over worlds and does not introduce the world quantification itself. In contrast, approach A takes mood morphology to be the locus of quantification, as defined in (66):[7]

(66) 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. $\forall w \in \text{BEST}_s(f, h)\ [p(w)]$

The lexical entries in (66) lead to two (related) problems.

The first problem is that the entries in (67) do not produce proper de dicto readings but 'near' de dicto readings. This is noted by Alonso-Ovalle, Menéndez-Benito & Rubinstein (2024) for structures like (67): Instead of the proper de dicto reading in (67a) with no $\forall w'$ within the relative clause, these lexical entries produce the spurious near de dicto reading (67b) with $\forall w'$ inside the relative clause:

(67) z wants [for Pedro to fall in love with [$_{\text{de\_dicto}}$ a student that lives in Noho]].
a. Proper de dicto reading: AVAILABLE
$\lambda w_0.\ \exists e\ [e<w_0 \wedge \text{wanting}(e) \wedge \text{Exp}(e,z) \wedge \forall w' \in \text{BEST}_{w0}(\cap \text{Dox}_z(w_0),$
$\text{Bou}_z(w_0))\ \exists x\ [\text{student}_{w'}(x) \wedge \text{live-Noho}_{w'}(x) \wedge \text{fall-in-love}_{w'}(\text{pedro},x)\ ]\ ]$
b. 'Near' de dicto reading: UNAVAILABLE
$\lambda w_0.\ \exists e\ [e<w_0 \wedge \text{wanting}(e) \wedge \text{Exp}(e,z) \wedge \forall w' \in \text{BEST}_{w0}(\cap \text{Dox}_z(w_0),$
$\text{Bou}_z(w_0))\ \exists x\ [\text{student}_{w'}(x) \wedge \underline{\forall w'' \in \text{BEST}_{w0}(\cap \text{Dox}_z(w_0), \text{Bou}_z(w_0))}$
$\underline{[\text{live-Noho}_{w''}(x)]} \wedge \text{fall-in-love}_{w'}(\text{pedro},x)\ ]\ ]$

To allow for the proper de dicto reading (67a), Alonso-Ovalle et al. (2024) propose that subjunctive morphology follows modal concord, in that a single c-commanding operator SUBJ in the periphery of the complement clause may license instances of (uninterpretable) subjunctive morphology in several clauses, as in (68):

(68) Modal Concord structure:
[$_{\text{ComplClause}}$ SUBJ … V.subj.morph … [$_{\text{RelClause}}$ … V.subj.morph…]]

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[6] See footnote 1.

[7] See Alonso-Ovalle, Menéndez-Benito & Rubinstein 2024 on purpose relative clauses where another source of quantification is needed.

To disallow the spurious near de dicto reading (67b), Alonso-Ovalle et al. (2024) tentatively venture two possibilities to block the non-concord structure (69). One possibility is that (69) is blocked by economy considerations: The operator SUBJ is inserted only when needed to license subjunctive morphology; since the higher SUBJ suffices to license all subjunctive morphology in (68), only the higher SUBJ can be inserted and (69) is ruled out. However, note that this economy constraint also predicts purpose readings of relative clauses to be unavailable when another instance of subjunctive morphology appears higher in the structure, as in (70). This prediction is not borne out:

(69)   Modal Non-Concord structure:
       * [ComplClause SUBJ … V.subj.morph … [RelClause SUBJ… V.subj.morph…]]

(70)   A Ana le desagradó que le comprásemos   a Pedro una radio
       To Ana CL displeased that CL bought.SUBJ.1PL to Pedro a   radio
       que le   distrajera en el hospital.
       that him entertain in the hospital
       'It displeased Ana that we bought Pedro a radio to entertain him in the hospital.'

As a second possibility, Alonso-Ovalle et al. (2024) speculate that readings corresponding to non-concord structures like (69) might be possible but harder to detect, like negative non-concord readings in Catalan, which are only available with certain prosody (Espinal et al. 2016). However, note that the near de dicto reading (69b) is truly unavailable and prosody does not help.

The second problem with the entries in (66) is that they allow for a de re construction of the host NP even when the relative clause bears subjunctive. More concretely, they allow for interpreting the host NP as scoping outside of the complement clause and for subjunctive morphology in the relative clause to quantify over the Dom(content(e)) of the attitude event e, as shown in (71). This reading is, however, unavailable. Crucially, since the host NP containing the relative clause is interpreted outside the complement clause, the modal concord mechanisms suggested by Alonso-Ovalle et al. (2024) could not apply to rule out this reading.

(71)   Sofia wants [that Ana buys.SUBJ [de re a book that has.SUBJ red covers]].
       a. De re reading with subjunctive Relative Clause: UNAVAILABLE
          $\lambda w_0. \exists e$ [e<$w_0 \wedge$ wanting(e) $\wedge$ Exp(e,sofia) $\wedge \exists x$ [book$_{w0}$(x) $\wedge \forall w''\in$
             BEST$_{w0}$($\cap$Dox$_{sofia}$(w$_0$), Bou$_{sofia}$(w$_0$)) [has-red-cover$_{w''}$(x)] $\wedge$
             $\forall w'\in$ BEST$_{w0}$($\cap$Dox$_{sofia}$(w$_0$), Bou$_{sofia}$(w$_0$)) [Ana buys$_{w'}$(ana,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.'

In sum, section 4 has shown that our proposed entries treating mood as a world proform lead to standard de re and de dicto readings and derive the desired mood-reading correlation. In contrast, treating mood as the locus of quantification (or as uninterpretable morphology mirroring a ∀w-quantifying operator SUBJ inside the relative clause) has problems deriving proper de dicto readings, blocking spurious near de dicto readings and maintaining the mood-reading correlation.

5 Mood alternation in conditionals: Sketch of motivation of ingredient ③

Recall the basic interpretive contrast that we saw in conditional clauses. The indicative conditional (5) is interpreted as epistemic, thus indicating that the protasis proposition is considered possible by the speaker. The subjunctive conditional (6) is –typically– interpreted as counterfactual, hence indicating that the protasis proposition is considered contrary to fact by the speaker.[8]

While we will not attempt to fully derive the distribution of mood in conditionals from our lexical entries, we would like to briefly sketch a motivation for our choice of ingredient ③. For this ingredient, we sided with approach B and made the subjunctive the unmarked, presuppositionally lighter form. In contrast, siding with approach A would make both forms equally presuppositionally heavy, as defined in (72):

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

The main motivation for our choice is the empirical asymmetry between the effects of indicative vs. subjunctive in conditionals. On the one hand, it is known that, in certain pragmatic contexts, the interpretive effect of subjunctive is cancellable. For example, despite being in the subjunctive, the protasis proposition in (73) is not understood as contrary-to-fact (Anderson 1951). The same holds for the Spanish version (74). On the other hand, the effect of indicative is not cancellable, as the infelicity of (75-76) shows:

(73)   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)

(74)   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

---

[8] Example (6) also has a layer of so-called 'fake tense'. 'Fake tense' is necessary but not sufficient to build a counterfactual conditional in Spanish; subjunctive mood is needed as well (Romero 2017).

(75) Jones didn't take arsenic. # If he took arsenic, he is dead by now.

(76) Juan no tomó arsénico. # Si tomó   arsénico, a estas horas ya está muerto.
Juan not took arsenic.   If took.IND arsenic, at these hours already is dead

 This asymmetry can be derived from ingredient ③ in our lexical entries in (32). While the steady effects of the indicative are hard-wired in its heavier presupposition, the wavering counterfactuality of subjunctive antecedents can be derived if subjunctive is presuppositionally lighter and if the effects of Maximize Presupposition are typically active but can be cancelled in certain pragmatic contexts.[9] In contrast, by making both moods equally presuppositionally strong, the lexical entries in (72) from approach A provide no explanatory path for the observed empirical imbalance.

6 Conclusions

In this paper, we have argued for a combination of ingredients from two main analyses in the literature, which we labelled approach A (Giorgi & Pianesi 1997; Portner & Rubinstein 2020) and approach B (Schlenker 2005; cf. von Fintel 1998 and Romero 2017). For ingredient ①, we formulated the meaning distinction encoded by mood in terms of the simplex content of an attitude event e, as in approach A, and not in terms of the local context set, as in approach B. For ingredient ②, we proposed that mood introduces a world pronoun, as in approach B, and not quantification over worlds, as in approach A. Finally, for ingredient ③, we defined subjunctive mood as the unmarked, presuppositionally lighter form, as in approach B, and not as presuppositionally parallel to the indicative, as in approach A. These three ingredients crystalize in our proposed lexical entries:

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

 b. $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g$ is defined only if $g(2)\in \text{Dom(content}(g(1)))$;
  if defined, $[\![\text{SUBJ}_2{}^{\text{pro1}}]\!]^g = g(2)$ (=32)

 With this proposal, the meaning contribution of mood is kept uniform across constructions in the grammar of Spanish, including: (a) mood selection by attitude verbs, the mood-force correlation in matrix clauses and mood alternation in the complement of communication verbs, for which the choice of ingredient ① was crucial; (b) mood alternation in relative clauses, for which the choice of ingredient ② was key; and (c) mood alternation in conditional clauses, for which our choice of ingredient ③ opens a promising path.

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

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