TENSE AND INTENSIONALITY IN SPECIFICATIONAL COPULAR SENTENCES
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Introduction. Copular sentences of the shape *XP1 is XP2* can be divided into at least two types: predicational, where XP2 predicates a property of XP1, as in (1); and specificational, where XP2 intuitively identifies the value of XP1, as in (2). Specificational sentences exhibit a tense restriction known as "Tense Harmony": they cannot at the same time have present tense in XP1 and past tense in matrix *be*, as illustrated in (3) (Akmajian 1970, Higgins 1973, Sharvit 2003). Predicational sentences do not observe this restriction.

(1)   The number of planets is large.   PREDICATIONAL
(2)   The number of planets is nine.   SPECIFICATIONAL
(3)   a. What John wanted to buy was this book and that magazine.
        b. * What John <u>wants</u> to buy <u>was</u> this book and that magazine.

Sharvit's (2003) derives Tense Harmony from the idea that, in the formula corresponding to the entire sentence, the matrix tense operator must bind a tense variable within XP1, see (4)-(5). This idea can be implemented in two ways: (**I**) using a L(ogical) F(orm) where matrix *PAST* directly binds a variable in XP1, and taking specificational *be* to denote bare identity, as in (6); or (**II**) using the LF in (7a) and treating *be* as (temporally) intensional, as in (7b). As the two strategies lead to the same result in her examples, Sharvit leaves the choice between the two open.

(4)   The president was Bill Clinton.
(5) $\exists t [t < now \ \wedge \ \iota x[president(x,t)] = bc]$
(6)   a. PAST 1 [[the president-t_1] be Bill Clinton]   b. $[[be]] = \lambda X_\sigma \lambda Y_\sigma . Y = X$
(7)   a. PAST 2 [[2 the president-t_2] be-t_1 Bill Clinton]   b. $[[be]] = \lambda t_i \lambda X_\sigma \lambda Y_{<i,\sigma>} . Y(t) = X$

The goal of this paper is to argue for strategy (II). First, we will show that the two strategies must be distinguished, since they sometimes lead to different empirical results. Second, once this distinction is made, data on specificational sentences will support strategy (II) over strategy (I).

Temporal dependence *vs*. (world and temporal) intensionality. On the one hand, Musan (1995) argues that NPs with cardinal readings –e.g., a bare plural with an $\exists$-interpretation– have only a temporal dependent reading in German. The same holds for Spanish bare plurals, as illustrated in (8). These temporally dependent readings can be captured by requiring an LF where the local tense operator binds a variable inside the bare plural NP, in the spirit of strategy (I).

(8)   En 1990 Juan invitó a profesores a su fiesta.
      In 1990 Juan invited A professors to his party   'In 1990 J. invited professors to his party.'
      a. Temporally dependent: 'In 1990 John invited people that were professors in 1990.'
      b. * Temporally independent: 'In 1990 J. invited people that are professors (only) now.'

On the other hand, when an NP with a Relative Clause (RC) functions as the object of an intensional verb like *buscar* 'look for' in Spanish, the mood in the RC encodes the scopal relation between the two (see Farkas 1993). The NP in (9) is understood as de dicto with respect to *buscar* when the RC is in Subjunctive, and it is understood as de re when the RC is in Indicative. De dicto readings follow from the fact that the semantic argument of *look for* is (or at least can be) the intension of the NP, in a way parallel to strategy (II).

(9)   En 1990, J. estaba buscando   a un profesor que podía   / pudiese hablar 7 idiomas.
        In 1990 J. was   looking-for A a professor that could-IND / could-SUBJ speak 7 lgs
        'In 1990, J. was looking for a professor that could-IND/SUBJ speaks 7 languages.'

The question then arises whether, empirically, temporal dependency and (world/temporal) intensionality are the same phenomenon. If an NP has only a temporally dependent reading, must this NP be understood de dicto? No: (10) shows that a bare plural NP (temporally dependent

reading) is grammatical with Indicative (de re). If an NP is understood de dicto, must this NP have a temporally dependent reading only? Yes: the indefinite NP with Subjunctive in (11) (de dicto) is necessarily temporally dependent.

(10)   En 1990, J. estaba buscando   a profesores que podían   hablar 7 idiomas.
        In 1990 J. was   looking-for A professors that could-IND speak 7 languages
        'In 1990, J. was looking for professors that could-IND speaks 7 lgs' (de re + t-dep.)

(11)   En 1990, J. estaba buscando   a un profesor que pudiese   hablar 7 idiomas.
        In 1990 J. was   looking-for A a   professor that could-SUBJ speak 7 languages
        'In 1990 J. was looking for a professor that could-SUBJ speak 7 lgs'(*de dicto + t-indep)

This means that being the dicto entails being temporally dependent but not vice-versa. We have seen that specificational *be* displays a type of temporal dependency with respect to XP1, namely Tense Harmony. The question is, then, whether *be* is also an intensional verb with respect to XP1. If it is, strategy (II) should be followed. If it is not, we should take strategy (I).

Specificational *be* is an intensional verb. Heim (1979) observes that (12) is ambiguous. Under reading (12a), John and Fred know the answer to the same price question. Under reading (12b), Fred knows the answer to a price question and John knows the answer to the meta-question "What price does Fred knows?". Romero (2003) observes that XP1s in specificational sentences also display this question / meta-question ambiguity, as in (13)-(14).

(12)   John knows the price Fred knows.
        a.   'John knows the same price as Fred does.'
        b.   'John knows what price Fred knows.'

(13)   The price that Fred thought was $1.29 was (actually) $1.79.
        'The question whose answer Fred thought was $1.29 has as its real answer $1.79.'

(14)   The price that Fred thought was $1.29 was the price of milk.
        'The meta-question "What price question did Fred think has as answer $1.29?" has as its answer "How much is the milk?".'

Romero (2003) proposes a unified intensional analysis of *know*+NP and XP1+*be*. Like *look for* in (15), *know* and *be* (in (16)) are intensional verbs that can draw their intensional semantic argument from the intension or from the extension of the NP, as illustrated in (13')-(14'):

(15)   a. John is looking for the unicorn with the longest horn.   (ok de dicto desire)
        b. John is looking for the unicorn Fred is looking for (: the one with the longest horn).

(16) $[[Be_{spec}]]$ = $\lambda x_\tau \lambda y_{<s,\tau>} \lambda w_s. \, y(w) = x$ (ok de dicto desire).

(13')   Extension of the NP + [[*be* …]]
        $\lambda w. \, [\, \iota \underline{x}_{<se>} \, [price(\underline{x},w) \, \& \, \forall w''' \in Dox_{fred}(w) \, [\underline{x}(w''') = \$1.29]] \, (w) \, = \, \$1.79 \,]$

(14')   Intension of the NP + [[*be* …]]
        $\lambda w. \, [\, \lambda w''. \, \iota \underline{x}_{<se>} \, [price(\underline{x},w'') \, \& \, \forall w''' \in Dox_{fred}(w'') \, [\underline{x}(w''') = \$1.29]] \, (w) \, =$
                    $\iota \underline{x}_{<se>} \, [price\text{-}of\text{-}milk(\underline{x},w)] \,]$

Hence, since specificational *be* is intensional, we choose strategy (II) over strategy (I). Furthermore, contrary to strategy (I), the strategy (II) spelled out in (16)-(13')-(14') predicts that Tense Harmony will result when the NP contributes its intension but not when it contributes its extension. This prediction is borne out:

(17)   The price that Fred <u>thinks</u> is $1.29 today <u>was</u> $1.79 yesterday.   (with NP's extension)

(18)   * The price that Fred <u>thinks</u> is $1.29 today <u>was</u> the price of milk.   (with NP's intension)

Some References. HEIM, I. 1979. Concealed Questions, in R. Bäuerle et al. (eds.), *Semantics from different points of view*, Springer.   HIGGINS, R. 1976. *The Pseudo-cleft construction in English*. Indiana Univ.   ROMERO, M. 2003. On concealed questions and specificational subjects, ms. submitted to *L&P*.   SHARVIT, Y. 2003. Tense and identity in copular constructions, *NLS* 11.