

**Evaluative and non-evaluative perspective sensitivity:
Experimental investigations of logophoric anaphors and subjective adjectives**

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Language contains a variety of different kinds of perspective-sensitive elements, e.g. predicates of personal taste (PPTs, *tasty, fun*), epithets (*the idiot*), logophoric reflexives (e.g. representational NPs, *picture of herself*), and relative spatial terms (*left/right*). These all refer to the point-of-view of an individual, sometimes referred to as the perspectival center/anchor (e.g. Bylinina, Sudo, McCready, 2014). Many of these perspectival elements also carry information about the center’s subjective evaluation of something/one (e.g. PPTs, epithets). Strikingly, many analyses of perspective-sensitive elements have focused on sentences with one perspectival element. Utterance with multiple perspective-sensitive elements have received less attention. Interestingly, work by Kneer et al. (2016), Bylinina et al. (2017) and Anand & Korotkova (2016) suggests that, at least on the sentential level and at least with PPTs, *multiple perspectival elements can be anchored to different attitude holders*. However, these studies focused on cases where the 1st-p speaker is one of the competing attitude holders/judges. This may underestimate perspectival plurality: Because 1st person is privileged as an attitude holder, it may be that whenever it is available, it is preferred. A clearer picture regarding perspectival plurality may emerge in contexts with *multiple third-person attitude holders*. **In contrast** to Kneer and others’ claims about perspectival plurality, it has been suggested, broadly speaking, that multiple perspectival elements in the same domain are anchored to the same attitude holder. E.g. Charnavel (to appear) appears to predict that *multiple perspectival elements in the same domain are bound by a single attitude holder*. She proposes that exempt anaphora are bound by a *pro* generated by a logophoric operator OP_{LOG} , and posits that with an exempt anaphor, “all perspectival elements of its domain must be evaluated from the first-personal perspective of its antecedent.”¹

To shed light on these topics, we conducted 2 studies on subjective content and perspective-sensitive anaphora. We tested the possibility of perspectival plurality with (i) **subjective adjectives** (predicates of personal taste, PPTs) and (ii) **logophoric anaphors** (reflexives and pronouns) in Representational NPs (RNPs, *photograph of her/herself*). Anaphors in RNPs are commonly argued to be logophoric, sensitive to semantic and pragmatic factors, exempt from Binding Theory (e.g. Kuno 1987, Reinhart & Reuland 1993; but note that Charnavel defines ‘exemption’ differently). Crucially, prior work argues that both reflexives and pronouns in RNPs are sensitive to point-of-view (e.g. Kuno 1987/reflexives, Tenny 2003/pronouns). Thus, we can ask *how and whether identification of PPTs’ perspectival center (judge) relates to identification of the antecedent of logophoric anaphors*.

Exp 1: People (n=42) read sentences (ex.1), containing representational NPs modified by PPTs (e.g. *the frightening photograph*), and answered questions (ex.2). We manipulated (i) the verb (*told/heard from*) – thus manipulating the *source-of-information* and *perceiver-of-information* status of the subject and object – and (ii) whether the representational NP (RNP, *photograph of...*) contains a reflexive, a pronoun or no anaphor. We used a Latin-Square design (36 targets, 36 different PPT adjectives, 68 fillers). The questions probe identification of the PPT judge (2b) and, in the anaphor-containing conditions, also probe the antecedent of the reflexive/pronoun in the RNP (2a). On pronoun and reflexive trials, people first answered question (2a) and then question (2b). On no-anaphor trials, they only answered question (2b). People were asked to imagine they were reading sentences from fiction.

(1) Nora **{told/heard from}** Amy about the frightening photograph **of herself/of her/(no anaphor)**.

(2a) Who is shown in the photograph? Nora Amy

(2b) Whose opinion is it that the photograph is frightening? Nora Amy Narrator

We consider 2 competing hypotheses regarding how/whether the identification of the perspectival center for PPTs (i.e., the evaluator/judge) relates to the identification of the antecedent of logophoric anaphors:

Hyp.1: Anaphor-governed judge hypothesis. If perspective-sensitive anaphors and evaluative PPTs are anchored to a unified perspectival center—e.g. if the referent of a **logophoric reflexive is what**

¹ It’s worth noting that different authors define ‘exempt’ differently. Our studies test the *anaphor-governed judge hypothesis* and the *anaphor-independent judge hypothesis*, and were not designed to directly test Charnavel’s claims.

determines the judge for a PPT in the same RNP in sentences like (1a)—we expect converging answers to the *who-shown* and *whose-opinion* questions. Given Kaiser et al. (2009)’s findings that reflexives in RNPs are guided by subjecthood and source-of-information, we expect both *who-shown* and *whose-opinion* questions to show an overarching subject preference, but relatively more object choices with *heard from* than *told* for sentences like (1a), due to reflexives preferring sources-of-information. What about **short-distance pronouns** (*photograph of her*), also claimed to be perspective-sensitive (Tenny 2003, 2004)? If the *anaphor-governed judge hypothesis* applies to both logophoric reflexives and short-distance pronouns, then—given Kaiser et al. (2009)’s finding that short-distance pronouns in RNPs are biased towards the perceiver-of-information—both *who-shown* and the *whose-opinion* questions for sentences like (1b) should show an object preference with *told* and a subject preference with *heard from* (perceiver pref). But if the *anaphor-governed judge hypothesis* is restricted to logophoric reflexives, there may be no relationship between *who-shown* and *whose-opinion* questions with pronouns.

Hyp.2: Anaphor-independent judge hypothesis. If perspective-sensitive anaphors and PPTs can be anchored to different perspectival centers, there is no reason for answers to the *who-shown* and *whose-opinion* questions to converge, and no reason for referential biases of reflexives and pronouns in RNPs to determine the judge of evaluative PPTs. Under this view, anchors of PPTs and perspective-sensitive anaphors can be distinct. Based on Kaiser et al. (2009), we still expect **pronouns** to prefer perceivers-of-information (subject of *heard*, object of *told*) and **reflexives** to show a subject preference modulated by a source-of-information preference (object of *heard*, subject of *told*). What about the **judges of PPTs**? Recent work by Bylinina (2014) and McNally/Stojanovic (2017) highlights the importance of PPT judges being *experiencers*. In sentences like (1a-c), the most plausible experiencer for the PPT (e.g. the person who experienced the photograph as frightening) is the *source-of-information* (subject of *told*, object of *heard*). Thus, if PPT judge identification is not governed by the anaphor’s antecedent, we may find an *experiencer preference* for *whose-opinion* questions in sentences with and without anaphors (1a-c).

Results/Exp1: Who-shown questions (anaphor resolution): Reflexives trigger more subject interpretations than pronouns (glmer, $p < .001$) which elicit more object interpretations. The rate of object interpretations with pronouns is modulated by the verb: *tell+pro* elicits more object choices than *heard+pro* (p ’s $< .01$). This replicates the perceiver preference (Kaiser et al. 2009). Reflexives elicit numerically more subject choices with *told* than *heard*. This difference is not significant, but it is in line with Kaiser et al. (2009)’s source preference. **Answers to whose-opinion questions (which probe PPT interpretation, judge identification)** reveal a strong preference to interpret the **source of information** (subj of *told*, obj of *heard*) as the judge, in line with the experiencer-based prediction. This holds with pronouns, reflexives and the ‘no anaphor’ condition (glmer, p ’s $< .01$).

Crucially, **once we combine these response types**, we find *a divergence between PPT judge identification (subjective) and antecedent choice (referential)*. **Figure 1** (on the next page) shows how often anaphors are interpreted as referring to subjects (left half) vs. to objects (right half), and what the *whose-opinion* responses are in each case. For the leftmost 4 bars (showing proportion of trials where the anaphor is interpreted as referring to the subject), if PPT judge identification were aligned with antecedent choice, all 4 bars should be red. However, this is not the case in the *heard* conditions with either anaphor: despite a high rate of subject antecedent choices, there is a high rate of object-opinion responses (*yellow*). This disconnect is also visible in the 4 bars on the right side (how often anaphors refer to objects). Pronouns in particular show high rates of subject opinion choices (*red*) with *told*, despite an object preference.

Exp.2 had the same design and items as Exp.1, but participants (42 new people) could choose multiple answers to the *whose-opinion* question (ex.2b). Both the *who-shown* and *whose-opinion* results replicate Exp.1: Even when people could have chosen both subject and object, or subject and narrator (etc.) as judges of the PPT, they still showed a clear preference for the single source individual – just like Exp.1.

Our data support the *anaphor-independent judge hypothesis*: We find no evidence that judge identification of PPTs and the perspectival anchor targeted by logophoric reflexives/pronouns go hand-in-hand. Our results support perspectival plurality, even when the PPT and anaphor are in the same RNP. This suggests interpretation of *evaluative content* (PPT judges) needs to be distinguished from interpretation of *non-evaluative content* (referential dependencies), even when both are perspective-sensitive.

Figure 1: On what proportion of trials does the anaphor refer to the subject vs. the object, and whose opinion does the PPT reflect?

