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Plural and Quantified Protagonists in Free Indirect Discourse and Protagonist Projection*

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Abstract

In this paper I observe a number of new plural and (apparently) quantified examples of *free indirect discourse* (FID) and *protagonist projection* (PP). I analyse them within major current theoretical approaches, proposing extensions to these approaches where needed. In order to derive the wide range of readings observed with plural protagonists, I show how we can exploit existing mechanisms for the interpretation of plural anaphora and plural predication. The upshot is that the interpretation of plural examples of perspective shift relies on a remarkable concert of covert semantic and pragmatic operations.

1 Introduction

Sentences in *free indirect discourse* (FID) express the thoughts or words of some salient protagonist(s). In (1) below, we interpret the second and third sentence as reporting what Little Johnny thought or said. At the same time, the use of past tense indicates that we are not dealing with simple quotation:¹

(1) Little Johnny was excited. *Tomorrow was Christmas. Santa Claus was coming!*

The literature on FID mostly focuses on cases in which the protagonist is a singular individual (cf. Banfield 1982; Doron 1991; Recanati 2000; Schlenker 2004; Sharvit 2008; Eckardt 2014; Maier 2015). Examples of FID by plural protagonists are rarely noted, and even then, only in passing. Doron (1991) discusses the case in (2) and remarks that “these two characters are having the same thought, each from their own point of view” (p. 57).

*I am grateful to Amy Rose Deal and Amir Anvari for asking me the question of how to handle quantification over the protagonist in some examples of Protagonist Projection: This paper grew out of an attempt to give an answer. I am also grateful to the handling editor Rick Nouwen and two anonymous reviewers for exceptionally useful comments and suggestions on a previous version of this manuscript. The research reported here was supported by the institutional grants ANR-10-LABX-0087IEC; ANR-10-IDEX-0001-02PSL and a visiting scholarship at UC Berkeley.

¹Throughout the paper, I use italics to mark FID or PP content.

- (2) *Was he in love with her?* Jill and Jerry both wondered. (Doron 1991, p.57)

In Doron’s example the two protagonists are identified by their names. We might observe that plural definites can also serve as antecedents for plural protagonists of FID: In (3) all the individuals denoted by the plural definite *the girls* are understood to have the thought represented in FID:

- (3) The new guy walked in. The girls looked at each other. *He was handsome!*

It also seems to be possible to quantify over protagonists in examples of FID: in (4) the second and third sentences are interpreted as expressing the thoughts or words of all the children in town:

- (4) Every child in town was excited. *Tomorrow was Christmas. Santa Claus was coming!*

A different method from FID that also evokes some character’s subjective point of view without explicit operators is *protagonist projection* (PP) (cf. Holton 1997, Stokke 2013, 2021b, Abrusán 2021b), also known as *represented perception* (cf. Brinton 1980, Banfield 1982) or *viewpoint shift* (VS) (cf. Hinterwimmer 2017). Examples of PP are less similar to quotation than FID in that they do not usually report a statement made by the protagonist, not even a silent but linguistically explicit thought event; they simply represent the mental state of a protagonist. The protagonist is responsible for the content of the representation, but the linguistic form is usually given by the narrator. Observe the following example:

- (5) Mary stepped out of the boat. *The ground was shaking under her feet.*
(Hinterwimmer 2017)

The second sentence above is an example of PP: it describes the perception of the protagonist Mary, but without implying that she in any sense verbalised her sensations, even silently to herself.

Cases of PP can involve plural protagonists; observe the following example from Harris and Potts (2009):²

- (6) I was struck by the willingness of almost everybody in the room—the senators as eagerly as the witnesses—to exchange their civil liberties for an illusory state of perfect security. They seemed to think that democracy was just a fancy word for corporate capitalism, and that the society would be a lot better off if it stopped its futile and unremunerative dithering about constitutional rights. *Why humor people, especially poor people, by listening to their idiotic theories of social justice?* [Lewis Lapham, Harper’s Magazine, July 1995] (Harris and Potts 2009)

The sentence in italics in the example above conveys the view of the senators and other powerful people, but without suggesting that they said, literally thought or would overtly endorse it.

Quantified examples of protagonist projection as (7) were investigated experimentally by Buckwalter (2014):

²Another plural example of PP is discussed in Stokke (2021b).

- (7) Everyone *knew that stress caused ulcers*, before two Australian doctors in the early 80s proved that ulcers are actually caused by bacterial infection. (Hazlett 2010)

Buckwalter (2014) argues that the reason why the first clause is not interpreted as factive is because it is an instance of PP.

The goal of this paper is to examine cases of plural and (apparently) quantified examples of FID and PP with two intersecting set of questions in mind: First, how can existing theories of these types of perspective shift accommodate plural and (apparently) quantified examples? Second, how is the relevant plurality identified and how is the resulting plural predication interpreted?

I start by discussing examples from FID, and argue that apparently quantified cases should be rather thought of as relying on e-type anaphora (Section 2). I introduce the three main competing accounts of FID in Section 3, and examine how they can accommodate plural protagonists. In Section 4 I turn to the interpretation of the examples of FID with plural protagonists: I first discuss how the relevant plurality might be identified in context and then discuss ways in which the plural thought ascription can be interpreted. I turn to PP in Section 5, and argue that in these cases, in contrast to FID, we find genuine quantification. I discuss how theories of PP can capture this fact.

2 Examples of Free Indirect Discourse

2.1 Plural protagonists

Examples (2)-(3) above are naturally understood distributively, i.e. as assigning the same thought to each member of the plurality. In some cases the plural predication can also be interpreted collectively, as illustrated by (8). The collective reading in (8a) is salient in a scenario in which the students work on a math problem as a group; the distributive reading in (8b) is available in a scenario where they each work individually.

- (8) The students made up their mind. *The solution was a prime number.*
- a. The students were collective agents of a single event of thinking that the solution was a prime number.
 - b. Every student was the agent of a separate event of thinking that the solution was a prime number.

The plural predication does not have to be interpreted maximally. First, the collective reading is true even if the predicate (of thinking) applies only to a subset of the relevant individuals. In the case below, the sentence in FID is felicitous even if it expresses the thoughts of only a small subset of the students:

- (9) The students were surprised. *Why were the dates of the exam changed?*

Second, when subgroups of the plurality are salient in the context, we can find cases of non-maximal distributive interpretation. Imagine that we are describing what happened at a tennis doubles match: the second sentence of the following example can be understood as expressing the sentiments of both teams of two players:

(10) The players protested. *The umpire couldn't be serious!*

In all the above cases the relevant plurality could be clearly identified from the preceding context. This however is not always the case, as can be seen in the following example:

(11) There was not a man in Black Hawk who had the intelligence or cultivation, much less the personal distinction, of Antonia's father. Yet people saw no difference between her and the three Marys; *they were all Bohemians, all 'hired girls.'* (Fludernik 1993, p.399)

The sentence *they were all Bohemians, all 'hired girls.'* is clearly in FID, representing the thoughts or words of 'people', but it is not fully clear who these people are taken to be. Everyone in Black Hawk? Most people in the community? As Fludernik (1993) notes, the text does not offer a way to make this precise. Similar examples, where FID represents the speech of some unidentified plurality were noted in Stokke (2021b).

I return in Section 4.2 to how the collective/distributive and various non-maximal readings arise, as well as to the case of an unidentified plurality. For the moment, let's just note that they parallel normal interpretive possibilities of plural predication.

2.2 Quantified protagonists?

How do we get the apparently quantified interpretation in example (4)? One might be tempted to think that the representation of the FID sentences in this example contains— at some level of interpretation—straightforward quantification over the set of protagonists set up in the first sentence. According to this, the interpretation of the second sentence above, in informal terms, would be as follows:

(12) Every child in town thought that the following day was Christmas.

An analysis along these lines would be similar to what is usually assumed to happen in examples of telescoping, cf. Roberts (1987):

(13) Each degree candidate walked to the stage. He took his diploma from the dean and returned to his seat. (Roberts 1987)

In standard analyses of telescoping, the second sentence in (13) is interpreted as 'Each degree candidate that walked to the stage took his diploma from the dean and returned to his seat'.

This is not, however, the right way to think about what is happening in (4). If it was, we would expect the following to be acceptable:³

(14) Every girl in the room was excited. *??Tomorrow she would finally receive her diploma!*

In effect, if a universal quantifier was hidden somewhere in the interpretation of the sentence in FID, it should be able to bind the singular pronouns *she* and *her*, just as we

³I am grateful to an anonymous reviewer for pointing this out.

observe in (13) above. Yet this is not the case. To make the example acceptable, we need to use plural pronouns:

- (15) Every girl in the room was excited. *Tomorrow they would finally receive their diploma!*

The presence of plural pronouns above suggests that rather than a quantifier, what is hidden in the FID sentences in (4) is a plural pronominal anaphor. On closer inspection, we find that examples of FID sentences show many parallels with plural pronominal anaphora.⁴

Plural pronouns can be anaphoric to various sets associated with a preceding quantificational structure, even if not all of these sets can be accessed in all contexts (cf. Nouwen 2003b). The most easily accessed antecedent is the reference set of a quantified sentence $Q(A,B)$, namely the intersection of the restriction and the scope ($A \cap B$), as shown in (16a). But reference to the complement set ($A - B$) is also possible, as shown in (16b), as well as to the maximal set, i.e. to all the elements in the restrictor (see (16c)).

- (16) Few MPs attended the meeting.
- a. They decided not to discuss anything important.
 - b. They went to the beach instead.
 - c. But they all attended the drinks afterwards. (Nouwen 2003b, p.43)

Further, other sets related to the reference set can also function as antecedents; in the example below, this is the set of papers written by the students:

- (17) Every student wrote a paper. They weren't very good. (Nouwen 2003b, p.12)

We find a similar pattern with examples of FID. First, the implicit protagonist can be understood as being anaphoric to the reference set, as in the example below:

- (18) Most kids in town were excited about Christmas. *Santa Claus was coming!*

The second sentence is naturally interpreted as expressing the thoughts or words of the kids in town who were excited about Christmas. Note that if the interpretation of the second sentence contained the quantificational DP *most kids in town (who were excited about Christmas)* we would not get this interpretation.

We also find examples of FID in which the implicit protagonist can be reconstructed from the complement set of the preceding quantificational structure, as in the example below:

- (19) Few teenagers were excited about Christmas. *Santa Claus was sooo childish!*

As in the case of plural anaphora, what helps to bring this reading out is when anaphora to the reference set would result in a contradiction. It is hard to find examples in which the protagonist would be anaphoric to the maximal set, but note that even with overt pronouns these are typically only available within a partitive construction such as *all of them*. While the whole partitive can function as an implicit protagonist, it is not

⁴Thanks to Rick Nouwen for suggesting that I explore an e-type account.

surprising that the maximal domain embedded in it cannot. In contrast, sets related to the reference set can be accessed:

- (20) Last night every man in the club invited his fiancée to a fancy restaurant. It was an amazing success. *How elegant he was! What a refined taste he had!* The men basked in the admiration.

This example is analogous to (17): the protagonists whose thoughts are reported in FID are the set of women invited by the men. (NB: One might wonder whether each of the women need think each of these statements. I return to this question in Section 4.2.)⁵

In sum, the implicit protagonist in the apparently quantified examples of FID walks and talks like a plural pronoun. I propose that this is because it is a plural pronoun, more precisely, the referent of a silent plural pronoun (or variable) that appears at some level of interpretation. Indeed, if we were to spell out the parenthetical clause that sometimes accompanies sentences in FID, we would have a plural pronoun:

- (21) Every child in town was excited. *Tomorrow was Christmas. Santa Claus was coming!*, they thought.

In the next section I examine how various approaches to FID can formally accommodate a silent pronominal element (or free variable) that refers to a plural antecedent. The interpretation of this element will be addressed in Section 4.

3 Analyses of FID

Currently there are three major semantic approaches to FID: Sharvit’s (2008) operator account, Maier’s (2015) mixed quotation account and the double context account (cf. Doron 1991; Recanati 2000, 2010; Schlenker 2004; Eckardt 2014). In this section I overview these three accounts with the following question in mind: How can they accommodate a plural protagonist? I show that while the operator and the mixed quotation approaches offer easy answers, the issue is not trivial for the double context view. Not trivial, but not impossible: I offer a solution in Section 3.3.

3.1 FID via an operator: Sharvit (2008)

In the broadly Kaplanian framework used by Sharvit (2008), the interpretation of sentences is relativised to a context parameter. Contexts contain an author, a world, a time, a location, and a variable assignment:

⁵Note that (20) also contains dependent indefinites within the FID sentences. Observe some further examples: a variation on Krifka’s famous L&P example, as well as an example where the overt pronoun *they* can be omitted:

- (i) a. Most students wrote an article. They were very enthusiastic. *They would send it to L&P tomorrow!*
b. Last night at the party every man was seduced by his fiancée. *How lovely she looked tonight!* (they thought)

Discussing the interpretation of the dependent pronouns (*it, she*) in the above examples would take us too far from the main point of this paper.

(22) $c = \langle \text{author}, (\text{addressee}), \text{world}, \text{time}, \text{location}, \text{variable assignment} \rangle$

The crucial twist on the Kaplanian picture, introduced originally by Doron (1991), is that every sentence is evaluated with respect to not one but two context parameters: the context of utterance (C) and another context (d). These two contexts coincide, unless there is an operator in the structure that shifts the second context. The lexical entries to indexicals are relativised to one or the other context parameter, as a result they either do not shift at all (as in the case of *I* and *you*), or they shift obligatorily (e.g. *today*, *here*) when they are embedded under a context shifting operator:

(23) $\llbracket I \rrbracket^{C,d,g} = \text{author}(C)$; $\llbracket \text{you} \rrbracket^{C,d,g} = \text{addressee}(C)$
 $\llbracket \text{today} \rrbracket^{C,d,g} = \text{the day surrounding time}(d)$; $\llbracket \text{here} \rrbracket^{C,d,g} = \text{location}(d)$

Situations that make a FID reading salient introduce a silent operator that shifts the second context parameter, d . This operator is similar to an attitude verb, e.g. *think*. But while attitude words quantify over worlds compatible with the subject’s beliefs, the FID operator quantifies over contexts (and assignments) compatible with the subject’s beliefs:

(24) *[simple, non-de se version]*
 For any function f from context-assignment pairs to propositions, and world w and any individual x ,
 $\llbracket \text{FID} \rrbracket^{C,d,g}(w)(x)(f) = \text{True}$
 iff for all context assignment pairs $\langle d', g' \rangle$ such that d' is compatible with what x believes in w and $g' = \text{assignment}(d')$,
 $f(d')(g')(\text{world}(d')) = \text{True}$

According to the above, the contents of FID-belief are sets of contexts rather than propositions (i.e. sets of belief). But otherwise, the FID operator takes worlds and individuals as arguments, just like the verb *think*. The individual argument could in principle be a variable anaphoric to a plural set (e.g. the reference set) (alternatively, a silent e-type pronoun).⁶

3.2 FID as mixed quotation: Maier (2015)

A seductively simple account of free indirect discourse was proposed by Maier (2015): FID is an example of mixed quotation, i.e. direct discourse in which members of a restricted class of lexical items, typically including pronouns and tenses, are unquoted (square brackets below mark unquotation):

(25) a. *Direct discourse*
 She thought to herself: “Tomorrow is my six year anniversary with Spencer”.
 b. *Free indirect discourse*
 “Tomorrow [was] [her] six year anniversary with Spencer”, she thought.

⁶In Sharvit (2008) person and tense features are interpreted as bound by the FID operator. She assumes feature deletion under agreement: thus when a pronoun corefers with the speaker in the matrix clause, its features are deleted and the pronoun is bound by the higher argument of the FID operator. It is not clear to me how this account would handle the difference between (14) and (15).

While in pure quotation a string is only mentioned, in mixed quotation a phrase is simultaneously used and mentioned.⁷ The use component is the underlying indirect report paraphrasing the original speech act, the mention component indicates that a specific phrase was literally a part of the original speech act. The use and mention components behave differently in embedded contexts: the mention component projects, in contrast with the use component. For this reason, Maier (2015) adopts a two-dimensional semantic representation. Let us observe first a simple (non-FID) case of mixed quotation:

(26) Graham said that he “learned from [his] mistakes”.

As the above example illustrates, not only phrases but also gappy constructions can be mixed quoted. The use of square brackets is understood as a short-hand for applying a mixed quoted construction to an argument outside the quotes:

(27) “learned from [his] mistakes” := “learned from ...’s mistakes”(he)

The construction inside the quote is a functional object: \llbracket learned from ...’s mistakes \rrbracket is a two place relation that combines with an individual to yield a property. When mixed-quoted, it means approximately *whatever a contextually salient x used \lceil learned from ...’s mistakes \rceil to mean*. This intuition is captured via a two-dimensional semantics: Its use component is a variable (R) that has the same type as the mixed quoted expression. The content of R is left unspecified, but is constrained by the mention-component that states that x used \lceil learned from ...’s mistakes \rceil to refer to relation R :⁸

(28) \llbracket “learned from ...’s mistakes”(he) $\rrbracket =$
 $\left\langle \begin{array}{c} R \\ x \text{ uses } \lceil \text{learned from ...’s mistakes} \rceil \text{ to refer to relation } R \end{array} \right\rangle (he)$

The upper dimension (i.e. the use-component) is the contribution that participates in the compositional derivation. Resolving the mention-component and projecting it gives the following truth conditions:

(29) \llbracket Graham said that he “learned from [his] mistakes” $\rrbracket =$ Graham used the construction \lceil learned from ...’s mistakes \rceil to refer to relation $R \wedge$ Graham said he stands in relation R to himself

Maier (2015) applies the same reasoning to examples of FID:

(30) Ashley was lying in bed freaking out. \lceil Tomorrow [was] [her] six year anniversary with Spencer. \rceil

The proposal is that the sentence in FID is understood as mixed quoted. This necessitates two adjustments for the use of mixed quotations: First, the notion of ‘using an expression to refer to something’ needs to be able to cover mental acts. Second, the logical form needs to contain a hidden attitude operator in the use component. Without this, the analysis would predict that the narrator is responsible for the truth of the content of P:

⁷Typical direct discourse in natural language, according to Maier (2015), is a special case of mixed quotation.

⁸Corner quotes (\lceil ... \rceil) indicate pure quotation.

$$(31) \quad \llbracket \text{“Tomorrow ... six year anniversary with Spencer.” (was)(her) \rrbracket = \\ \left\langle \begin{array}{c} x \text{ thought that } P \\ x \text{ used } \ulcorner \text{Tomorrow ... six year anniversary with Spencer} \urcorner \text{ to refer to property } P \end{array} \right\rangle (was)(her)$$

In (30) the free variable x is resolved to Ashley. But in general there is nothing that prevents such free variables from being anaphoric to a plural antecedent, e.g. the reference set of a quantifier.

3.3 Operatorless double-context accounts

The framework Unlike Sharvit (2008), the bicontextual accounts of FID proposed by Doron (1991); Recanati (2000, 2010); Schlenker (2004); Eckardt (2014) do not assume that FID is introduced by an operator that quantifies over contexts. For concreteness, I discuss the most complete version of this type of account to date, that of Eckardt (2014).⁹ The analysis also works out the intuition that sentences in FID are evaluated with respect to two contexts in a broadly Kaplanian framework. Thus interpretation is not only with respect to an external context (aka. context of utterance, \mathbf{C}) but also with respect to an internal context (aka. context of thought, \mathbf{d}), as well as a model \mathcal{M} and an assignment of values to variables g . The logical language includes the following set of variables (with \mathbf{R} , \mathbf{r} for reference time):

$$(32) \quad \{\text{AUTH, } \mathit{auth}, \text{AD, } \mathit{ad}, \text{NOW, } \mathit{now}, \text{HERE, } \mathit{here}, \text{WORLD, } \mathit{world}, \mathbf{R}, \mathbf{r}\}$$

There are two ways to interpret utterances. When they have their ordinary interpretation they are interpreted wrt. to a single external context $\llbracket \varphi \rrbracket^{M,g,\mathbf{C}}$. But they can also be interpreted with respect to a pair of external and internal contexts $\llbracket \varphi \rrbracket^{M,g,\langle \mathbf{C}, \mathbf{d} \rangle}$. In Eckardt’s (2014) theory contexts are thought of as special purpose variable assignments:

- (33) a. An external context \mathbf{C} is an assignment with the following properties:
 $\mathbf{C}: \{\text{AUTH, } \mathit{auth}, \text{AD, } \mathit{ad}, \text{NOW, } \mathit{now}, \text{HERE, } \mathit{here}, \text{WORLD, } \mathit{world}, \mathbf{R}, \mathbf{r}\} \rightarrow \mathbf{M}$
with $\mathbf{C}(\text{AUTH}) = \mathbf{C}(\mathit{auth}), \mathbf{C}(\text{AD}) = \mathbf{C}(\mathit{ad}), \dots, \mathbf{C}(\mathbf{R}) = \mathbf{C}(\mathbf{r})$
- b. An internal context \mathbf{d} is an assignment on the following variables:
 $\mathbf{d}: \{\mathit{auth}, \mathit{ad}, \mathit{here}, \mathit{now}, \mathit{world}, \mathbf{r}\} \rightarrow \mathbf{M}$
- c. A permissible pair of contexts $\langle \mathbf{C}, \mathbf{d} \rangle$ is one where
 \mathbf{C} is an external context and
 \mathbf{d} is an internal context and
 $\mathbf{d}(\mathit{now}) = \mathbf{C}(\mathbf{R})$

The two kinds of contexts, the single context $\llbracket \cdot \rrbracket^{M,g,\mathbf{C}}$ and the double context $\llbracket \cdot \rrbracket^{M,g,\langle \mathbf{C}, \mathbf{d} \rangle}$ are defined as follows:

$$(34) \quad \begin{array}{ll} \text{a. } \llbracket \mathit{auth} \rrbracket^{M,g,\mathbf{C}} = \mathbf{C}(\mathit{auth}) & \llbracket \text{AUTH} \rrbracket^{M,g,\mathbf{C}} = \mathbf{C}(\text{AUTH}) \\ \llbracket \mathit{ad} \rrbracket^{M,g,\mathbf{C}} = \mathbf{C}(\mathit{ad}) & \llbracket \text{AD} \rrbracket^{M,g,\mathbf{C}} = \mathbf{C}(\text{AD}) \\ \text{etc.} & \end{array}$$

⁹Eckardt’s (2014) proposal differs from its competitors in some important aspects, especially concerning the treatment of tense, aspect and presuppositions. This will not concern us in this paper.

- b. $\llbracket auth \rrbracket^{M,g,<C,d>} = d(auth)$ $\llbracket AUTH \rrbracket^{M,g,<C,d>} = C(AUTH)$
 $\llbracket ad \rrbracket^{M,g,<C,d>} = d(ad)$ $\llbracket AD \rrbracket^{M,g,<C,d>} = C(AD)$
 etc.

As a consequence of the above rules, variables in small capitals behave as unshiftable parameters, as they can be only interpreted by C . Variables in lowercase letters, in contrast, can be interpreted either by C (in single contexts) or d (in double contexts) and as a result they can receive a shifted interpretation. Unshiftable items are therefore translated into the logical language with small capitals while shiftable items are translated with lowercase letters.

Eckardt (2014) follows a broadly Stalnakerian approach, in which sentences update the previous common ground with their propositional content. Assume that $STORY_{n-1}$ is the set of worlds that represents the content of the story up to sentence s_{n-1} . Let s_n be a sentence interpreted in a single mode $\llbracket s_n \rrbracket^{M,g,C}$. Its asserted content p updates $STORY_{n-1}$ directly, by intersection:

$$(35) \quad STORY_n = STORY_{n-1} \cap \llbracket s_n \rrbracket^{M,g,C}$$

If, however, s_n is interpreted in a bi-contextual mode ($\llbracket s_n \rrbracket^{M,g,<C,d>}$), its asserted content p updates $STORY_{n-1}$ as follows:

- (36) a. If d is plausibly a context of thought, $STORY_{n-1}$ is updated with
 $\lambda w. THINK(author, now, w, p)$
 b. If d is plausibly a context of speech, $STORY_{n-1}$ is updated with
 $\lambda w. SAY(author, now, w, p)$

The analysis How should we analyse the examples in Section 2 in this framework? The answer is far from obvious. We could let the variables $AUTH, auth$ refer to pluralities, but this would only give us examples in which there is a single event of a plural entity speaking, e.g. a plurality of students asking a question. If we allow AD, ad to refer to pluralities as well, we might even predict examples of plural authors talking to plural addressees that nevertheless describe a single event:

- (37) a. The students wondered. *When was the exam?*
 b. The protesters confronted the policemen. *Why were they defending the system?*

But under the natural understanding of contexts as picking out a speech (or thought) situation, the examples in which the plural predicate is interpreted distributively (i.e. as describing a plurality of speech/thought situations) will not be derived by simply letting the special purpose context variables refer to pluralities.

For example, in (4) the second and third clauses are easily understood as representing the thoughts of each child in town; each child is assumed to have told herself the content of the passages in FID. But these events can happen at different places (and to a more limited extent, at different times, at least within the same day).

- (4) Every child in town was excited. *Tomorrow was Christmas. Santa Claus was coming!*

How can this be handled in a bi-contextual account? Perhaps the sentences in FID should be evaluated with respect to a plurality of internal contexts? However, this does not seem to be a promising route either: not only would it require the introduction of very complex interpretive machinery, it is also not clear how collective or non-maximal readings of plural protagonists could be captured.

Instead, I propose that the introduction of a plurality happens at the level of pragmatic context update (or story update). In effect, during the pragmatic update described above, the content of the sentence in FID is prefixed with a silent “they thought/said that”.

As discussed above, FID, understood as implicit speech, licenses the pragmatic updates of the context. Let us first concentrate on (36b), in which the internal context is plausibly a context of speech. The key idea, which I borrow from Eckardt (2015), is that the verb *say* is a predicate of events and it needs to ensure that the event of saying is itself the internal context relative to which the clausal complement p is evaluated. This requires the following assumptions: (a) that the domains of events and contexts have a non-empty intersection, i.e. there are things that are both events and contexts (b) there is an operation of lambda-abstraction over the internal context variable (similarly to the more commonly assumed abstraction over world parameters), cf. (38b), and (c) this lambda abstract, which Eckardt (2015) calls the shiftable character of the sentence, is the argument P of the verb *say*, as shown in (38c):

- (38) a. $\llbracket S \rrbracket^{C,d} = \Phi(C,d)$
 b. $\lambda d. \Phi(C,d)$
 c. lexical entry of *say*: $\lambda P \lambda x \lambda e. \text{SAY}(x,e,w,P(e))$
 ‘The event of saying is the context relative to which the complement P is evaluated’

Assume now that this is the lexical entry of *say* used in the pragmatic context update rule triggered by FID. This gives us the bi-contextual interpretation of the second sentence in (4) in Eckardt’s (2014) system (cf. p.101-103):

- (39) $\llbracket \text{Tomorrow was Christmas} \rrbracket^{M,g,<C,d>} =$
 $\lambda w. \exists e_2 (\text{Christmas}(e_2,w) \wedge \tau(e_2) \subset \iota t. t \text{ DAY-AFTER } d(\text{now}) \wedge R < \tau(e_2) < C(\text{NOW}))$
 ‘The proposition that there was an event e_2 , which is Christmas and which took place one day after $d(\text{now})$ but before $C(\text{NOW})$ and after the reference time R ’¹⁰

Abstracting over the internal context variable we get the shiftable character of the sentence:

- (40) $\lambda d \lambda w. \exists e_2 (\text{Christmas}(e_2,w) \wedge \tau(e_2) \subset \iota t. t \text{ DAY-AFTER } d(\text{now}) \wedge R < \tau(e_2) < C(\text{NOW}))$

Putting this together with the lexical meaning of *say*, we get the following contextual update of the second clause of (4):

- (41) $\lambda x \lambda e. \text{SAY}(x,e,w, [\lambda w. \exists e_2 (\text{Christmas}(e_2,w) \wedge \tau(e_2) \subset \iota t. t \text{ DAY-AFTER } e(\text{now}) \wedge R < \tau(e_2) < C(\text{NOW}))])$

¹⁰Cf. Eckardt’s (2014) discussion of why in this case the time of the event should be after the reference time rather than overlapping with it.

The value of the variable x above will be supplied in context, and there is nothing that prevents it from referring to a plurality. Assuming existential closure over events, we derive the meaning that there is a speaking event e by a plurality x with the following content: ‘Christmas is the day after the speaking event’. I assume that contexts of thought can be handled similarly if *think* is understood as ‘say to herself’.

3.4 Interim summary

All the three major approaches to FID need to assume accommodation of an implicit parenthetical “ x said/thought that p ”. The difference is whether this is hardwired into the semantics of the FID operator (as in Sharvit 2008), or is inserted into the logical form of the use component (Maier 2015) or is part of the pragmatic discourse update (Eckardt 2014). The subject of the parenthetical statement is a variable or a silent anaphoric pronoun and it could in principle be resolved to a plurality. In the next section I first examine how this variable/silent anaphoric pronoun might be resolved in context, and then I turn to various interpretations (collective, distributive, etc.) of the resulting plural predication.

4 Interpretation

4.1 Anaphora resolution

In all the analyses discussed above, the interpretation of FID necessitated introducing a silent pronoun (or variable) in the semantics or in the pragmatics. This pronoun (or variable) can also be spelled out explicitly in a parenthetical statement such as *she thought*, as shown in (42). The pronoun (or variable) in this covert or overt parenthetical needs to pick up a referent from the context in one way or another. In the simplest cases, such as (42), we have coreference to an antecedent introduced in the previous discourse. This antecedent can be singular (42a) or plural, as in (42b):

- (42) a. Mary looked at George. *He was handsome!* (, she thought)
 b. The girls looked at each other. *He was handsome!* (, they thought)

In more complicated cases the anaphoric relation between the pronoun and its antecedent cannot be understood as classical coreference (nor as binding). For example, in (43) the pronoun *they* is understood as referring to all the kids in town who were excited. But there is no expression with this referent in the example.

- (43) Most kids in town were excited about Christmas. *Santa Claus was coming!* (, they thought)

What we observe instead is e-type anaphora with maximal reference to a plurality that is introduced by the quantificational statement: the set of all kids in town who are excited about Christmas. This set, the reference set (aka. *refset*, cf. Nouwen 2003b), is the most common and easily available antecedent of maximal e-type anaphora, in general.

- (44) For any quantificational statement $Q(A)(B)$, the *reference set* for this statement

is $A \cap B$.

But other sets related to the reference set can also be accessed by e-type pronouns (cf. Nouwen 2003b). In the example below, the pronoun *they* refers back to the set of papers written by the students:

(17) Most students wrote a paper. They were not very good.(Nouwen 2003b)

As was mentioned in Section 2, analogous examples can be construed with FID as well:

(20) Last night every man in the club invited his fiancée to a fancy restaurant. It was an amazing success. *How elegant he was! What a refined taste he had!* (, they said.) The men basked in the admiration.

This example is similar to (17): the protagonists whose thoughts are reported in FID are the members of the set of women invited by the men. (I return to the question of whether each of the women need think each of these statements in Section 4.2 below.)

Currently, there are two major competing analyses of e-type anaphora: the dynamic semantic approach and the E-type approach. Below I give a very brief and informal review of both of these approaches. I remain agnostic in this paper about which of these theories is correct as the examples of FID do not provide clear arguments in favour of any of them. I will note, however, the various accommodations that need to be made to combine theories of FID with these two analyses of anaphora.

Dynamic Semantics According to Dynamic semantics the plural pronoun denotes a variable that is coindexed with a plurality that was introduced into the assignment function before. What is needed is a way to introduce the relevant pluralities into the assignment function. For this, it is assumed that quantifiers actively change the assignment function: they deposit in it information about potential subsequent anaphoric reference. The salient entities needed for subsequent reference will be then available within the assignment function, even if they do not correspond to a linguistic expression.

In order to be able to analyse plural discourse reference, Dynamic plural logic (DPIL) of van den Berg (1996) (cf. also Nouwen 2003b, Brasoveanu 2008, among others) assumes that natural language expressions are evaluated with respect to sets of variable assignments, also called information states. A highly simplified informal description is as follows. Information states may be represented as matrices, e.g. the information state after update with the first sentence in (17) might look as in Table 1. The rows of the matrix give the sequences of individuals that an assignment gives to variable names. The columns store the set of individuals assigned to a given variable name by the assignments. The rows of the matrix also encode quantificational dependency: for each row in I , the individual assigned to the variable x by that row is correlated with the individual assigned to the variable y by the same row.

The information state in Table 1 allows us to collect (a) the maximal set of students (the maxset) (b) the set of students who wrote papers (the refset) and also (c) the set of papers written by the students. These pluralities can then be made available for further anaphoric reference. (Cf. van den Berg 1996, Nouwen 2003b, Brasoveanu 2008 for detailed technical analyses.)

Information state I	x	y
assignment ₁	Anna	paper ₁
assignment ₂	Bill	paper ₂
assignment ₃	Cecilia	paper ₃
assignment ₄	Daniel	*

Table 1: Information state after update with the first sentence in (17)

What adjustments need to be made for theories of FID to be able to combine with DPIL, (beyond the non-trivial task of turning a static semantic meaning into a dynamic semantic context update)? Sharvit’s (2008) FID operator quantifies over context-assignment pairs. If it were to be combined with DPIL, it would have to quantify over context-information state pairs. Eckardt’s (2014) model assumes pragmatic update of the discourse context (STORY) with a silent (plural) pronoun. This update, to make it compatible with DPIL, would have to be part of the (dynamic) semantics of FID. (see Bimpikou et al. (2021) and Abrusán (2021a) for how update with FID might be handled in DRT.) Finally, Maier’s (2015) mixed quotation account of FID can be combined the most easily with DPIL, as far as I can see.

Pronouns as descriptions According to description approaches, e-type plural pronouns are semantically very much like definite descriptions that refer to a plurality made salient in the previous discourse (cf. Cooper 1979, Neale 1990, Heim 1990, Elbourne 2001, 2005). Which pluralities are made salient is not entirely a matter of pragmatics however: to correctly predict the constraints on anaphoric reference, a formal link between an antecedent and an e-type pronoun needs to be respected (cf. Kadmon 1987 and Heim 1990). Observe the following examples from Heim (1990): Arguably, the sentences in (45a) and (45b) mean the same thing. Nevertheless, the pronoun *her* in (45b) cannot be interpreted as co-varying with the men’s wives, presumably because there is no explicit antecedent to which this e-type pronoun could be linked.

- (45) a. Every man who has a wife is sitting next to her.
b. *Every married man is sitting next to her.

The most recent and detailed description-based approach, Elbourne (2005) assumes that e-type pronouns are definite descriptions that underwent NP deletion. Thus they have the same syntax as definite descriptions: they are composed from a definite determiner and an NP. For example, *her* is the spellout of $[D_{\text{def}} \textit{wife}]$, where *her* functions as the definite article and the NP *wife* has been elided. Since NP ellipsis requires an explicit antecedent, the formal link requirement on e-type pronouns is explained.

Pronouns and definite descriptions are both assumed to be functions from situations to individuals, and come with the presupposition that there is a unique individual in each minimal situation that satisfies the NP predicate. Quantification is assumed to be quantification over minimal situations, in the example above, minimal situations of a man and his wife. The uniqueness presupposition of *her* has to be satisfied in each such minimal situation, and as a consequence, the pronoun will be interpreted as co-varying.

Plural pronouns (*they*) are then elided versions of plural definite descriptions which

need to find an antecedent in the preceding discourse. For example in (43) (repeated below), the antecedent to the definite description is the quantifier *most kids*, and the reference is picked out by the restricted definite description (*the kids in town who were excited*).

- (43) Most kids in town were excited about Christmas. *Santa Claus was coming!*,
[the(y) kids in town who were excited] thought.

Combining theories of FID with description theories of pronouns, and in particular the theory of Elbourne (2005) is a relatively easy task: we only need to assume that the null pronoun that needs to be posited in the semantics of FID (or in the pragmatic update rule, as in Eckardt 2014) is a null definite description. The challenging aspect might be to find the relevant minimal situation in which the existential presupposition of the definite description is satisfied. This issue, however, is independent from our problem (cf. Schlenker 2011 and Nouwen 2020 for discussion).

Complement set anaphora Finally, we also find examples of FID in which the implicit protagonist can be reconstructed from the complement set of the preceding quantificational structure, as in the example below:

- (46) Few teenagers were excited about Christmas. *Santa Claus was sooo childish!*

As shown in Nouwen (2003a), the availability of such examples is highly context dependent; complement set anaphora is not always available. One contextual factor that helps to make it salient is if anaphora to the reference set would result in a contradiction. Given that a complex pragmatic inferential reasoning is needed to interpret these examples, Nouwen (2003a) argues that complement anaphora are not e-type anaphora, their referent is found instead by inferential reasoning. I assume that in the case of the FID example above the plural protagonist is found in a similar way.

4.2 Plural readings

Once we find the plural protagonist who is thinking or saying the content of the clause in FID, another question arises: how is this plural predication interpreted?¹¹ Firstly, we find both collective and distributive interpretations. In a scenario in which the students work on a math problem as a group, the collective reading of (47) is salient. But in a scenario where they each work individually, a distributive reading is also available: in this case the indefinite might co-vary with the students, i.e. the solution might be a different prime number for different students:

- (47) The students made up their mind. *The solution was a prime number.*
- a. The group of students was the collective agent of a single event of thinking that the solution was a prime number.
 - b. Every student was the agent of a separate event of thinking that the solution was a prime number.

¹¹I am grateful to an anonymous reviewer for raising this question.

The first reading describes a single event of thinking: the plural definite noun phrase *the students* denotes the sum (\oplus) of students (Link 1983, Schwarzschild 1996)¹² and this sum-denoting DP combines with the predicate *think*, which in turn needs to have sums in its denotation for the predication to succeed. Note, as pointed out in Lasersohn (1990) and Landman (1996), that the collective reading does not imply that each member of the sum/group contributed equally to the thinking event: rather collective participation/responsibility is implied. The collective reading of the example above is similar to the one we observe in (48), in which the collective predication succeeds even if only one of the gangsters actually pulled the trigger (Lasersohn 1990, Landman 1996):

(48) The gangsters killed their rivals.

The distributive interpretation is standardly assumed to be derived via applying a distributive (D) operator to the predicate (Link 1983); this operator applies the predicate to the individual atoms of a plural sum. Its event-based version below, proposed by Lasersohn (1998), makes it clear that the distributive reading involves separate events (cf. also Champollion 2017):

(49) a. The students [D [thought that the solution was a prime number]]
 b. $\llbracket D \rrbracket = \lambda P \lambda x \lambda e \forall y [y \leq_{atom} x \rightarrow \exists e' [e' \leq e \wedge P(y)(e')]]$

Applying the Distributive operator above and performing existential closure we get:

(50) $\exists e \forall y [y \leq_{atom} \oplus \text{students} \rightarrow \exists e' [e' \leq e \wedge \text{think-the-solution-is-a-prime-number}(y)(e')]]$

The distributive reading described above is an example of a maximal distributive reading: the predication is true for every individual member of the plurality. However, it is not necessary to distribute down to the atomic level: if the context provides a salient partitioning of the relevant plurality into parts, the distributive operator can quantify over such contextually given parts (a.k.a. *covers*) (cf. Schwarzschild 1996). Accordingly the distributive operator can be rewritten to be cover-sensitive, as shown in (51) below (for simplicity, I provide the non-event based version). For example in (52) world knowledge allows us to divide the set of shoes into pairs; this world knowledge is what supplies the value for the free variable *Cover*.

(51) $\llbracket D_{Cover} \rrbracket = \lambda P \lambda x \forall y [y \leq x \wedge y \in Cover_x \rightarrow P(y)]$

(52) a. The shoes cost 75\$.
 b. The shoes [D_{Cover} [cost 75\$]].
 c. $\forall y [y \in Cover_{shoes} \rightarrow y \text{ cost } 75\$]$
 where $Cover_{shoes}$ is a pragmatically determined minimal cover of shoes

Similarly, we find non-atomic distributive readings of plural protagonists in situations that make a suitable cover salient. For example, in the context of speaking of a tennis doubles match, the second sentence of the following example can be understood as expressing the sentiments of both teams of two players:

¹²Alternatively, as proposed by Landman (1989), definite noun phrases denote groups of individuals, where groups are complex but undividable atoms formed from sums.

- (53) The players protested. *The umpire couldn't be serious!*
 a. $\forall y [y \in \text{Cover}_{\text{players}} \rightarrow y \text{ said that the umpire couldn't be serious.}]$
 where $\text{Cover}_{\text{players}}$ is a pragmatically determined minimal cover of the players

Yet another type of non-maximal reading of plurals is shown in the examples below:

- (54) a. The children who ate pizza here last night got food poisoned. (Yoon 1996)
 b. I returned to the house because I thought I had left the windows open. (Krifka 1996)

In these examples there is no question of collective responsibility¹³ nor is there a contextually salient cover that can explain a non-maximal interpretation (cf. Krifka 1996, Yoon 1996, Malamud 2012, Križ and Spector 2021). Instead, distributive plural predication tolerates exceptions, to the point of receiving, in some cases, existential readings.

What makes such interpretations salient? To derive non-maximal readings, Malamud (2012) proposes a weak semantics for definite plurals and uses a decision theoretic approach to derive stronger truth-conditions. Thus sentences with plural definites have an underspecified interpretation in the sense that the definite plurals make available a set of candidate interpretations. Among these candidates, an operator selects the one(s) that are maximally relevant for the decision problem the hearer is facing. “The resulting meaning for sentences with underspecified definite plurals may remain underspecified between these optimal alternatives, capturing the intuition that speakers only need to be precise enough to address the QUD.” (Malamud 2012)

I propose that a similar reasoning allows the interpretation of (4) and (20) to be underspecified as to which members of the pluralities involved need to have the thoughts described for the sentences to be interpretable. Consequently, the plural predication in (4) can be felicitous even when not every child in town actually thought the content of the sentence in FID. Similarly, in (20) not every woman needs to think the content of the sentences in FID, rather the example can be understood as giving examples of what some of them thought or said.

Finally, let me point out two further issues that arise in connection with non-maximal readings of FID sentences by plural protagonists: Firstly, sentences can be interpreted even when we do not know the exact composition of the relevant base plurality (cf. also Stokke 2021b). For example in the excerpt below *people* refers to the habitants of Black Hawk, or maybe a subset of them; the exact reference of *people* is underspecified. The FID clause *they were all Bohemians, all ‘hired girls.’* is attributed to this plurality collectively. Given that collective thought attributions typically allow non-maximal readings, we end up attributing the sentence in FID to a presumably non-maximal subset of an underspecified set of individuals.

- (55) There was not a man in Black Hawk who had the intelligence or cultivation, much less the personal distinction, of Antonia’s father. Yet people saw no difference between her and the three Marys; *they were all Bohemians, all ‘hired girls.’* (Fludernik 1993, p.399)

Second, thought attributions to groups are rarely faithful reports of the thoughts of

¹³Nor collective body formation as in *The boys touched the ceiling* when they form a pyramid.

the members of the group. Observe the following example from Fludernik (1993) as well as her discussion of it:

- (56) If I told my schoolmates that Lena Lingard’s grandfather was a clergyman, and much respected in Norway, they looked at me blankly. *What did it matter? All foreigners were ignorant people who couldn’t speak English.* (Fludernik 1993, p.399)

Fludernik (1993) comments:

(The) community’s views (...) have been condensed into one linguistic shape that does not at all correspond to any actual speech or thought acts, not even to traceable utterances (...) I think we are now ready to conclude that free indirect discourse cannot be regarded as a quasi-verbatim representation of an actual speech or thought act and that in many cases the typicality and schematic nature of the represented linguistic expression is not only noticeable but indeed deliberately foregrounded and made use of for ironic purposes. (Fludernik 1993, p.400)

Observe also another, non-fictional example:

- (57) At that time the field seemed to be approaching an end. The status of linguistics as a science seemed well established for the first time. Careful and sophisticated methods of analysis of language had been developed. *At most some tinkering might be needed. What remained within linguistics proper was primarily to apply the methods to new materials.* That much was largely accepted. (from Chomsky 2021)

The phrases in italics above capture the views of the members of *the field*(of linguistics) in the 50’s, not the views of the author. But they are not faithful reports of any actual thoughts of the members of this group; rather they are stylised or typical utterances that are compatible with the actual thoughts of the members of *the field*.

That FID need not be a faithful report of a character’s inner speech is also emphasised by Currie (2010), who defends a view of FID as a form of *imitation*. “[W]e need a general sense of imitation which includes, for example, my uttering a sentence you have never uttered, but saying it in a way which brings to mind your characteristic mode of utterance. By imitating some aspect of a person’s way of behaving—their ‘style’, as we say—I may manage to do something which is expressive of their point of view.” (Currie 2010, p.130) FID, according to this view, is able to express a frame of mind or a disposition a character might have simply by imitating their style of speech, not by directly reproducing their words.

The stylised nature of FID is often exploited for ironical purposes: in these cases the author can pretend to speak from the point of view of a protagonist (cf. Currie 2010). Observe the following journalistic example:

- (58) Further developments in fauxlanthropy for the Amazon overlord, then, who has decided that death is as inevitable as taxes. Which is to say: not at all inevitable for the likes of him. Bezos was this month reported to be a significant investor in

Altos Labs, an age-reversal firm which is on the scientific quest for immortality. Among other expansions, it is thought the firm will now open a lab within the UK, which I think you'll agree means so much more to our nation than a fair tax contribution from Amazon. You know *we'd only spend that shit on social care or the NHS or something*, when Jeff can see it's far better for us to get people on ordinary incomes to pay extra for all that, so that guys like him are freed up to spaff their money on Earth's most preposterous midlife crises.¹⁴

In the example above, the sentence *we'd only spend ...* is interpreted as imitating a thought by Jeff Bezos in FID, not as reporting any actual thought. But because the ironical pretense is evident, and the target of irony is portrayed as having a defective perspective, the overall point of view in the case of ironical narration remains that of the author of the narration.¹⁵

4.3 Interpretations of plural protagonists

In sum, the interpretation of the pluralities that can be the authors of FID and also the interpretation of the resulting plural predication are both interesting and unsurprising: Interesting because we find a wide variety of interpretations, and unsurprising because this variety reflects the interpretive possibilities of plurals in general.

5 Quantification in protagonist projection

Recent work has brought into light examples of perspective shift that despite showing similarities with FID, are also clearly different from it. The examples are known under various names in philosophy, linguistics and literary theory, e.g. *represented perception* (cf. Brinton 1980, Banfield 1982), *protagonist projection* (PP) (cf. Holton 1997, Stokke 2013, Abrusán 2021b) or *viewpoint shift* (VS) (cf. Hinterwimmer 2017). Common in these examples is that they evoke a character's inner perception of the world from her point of view but in ways that lack explicit markers of perspective shift. In contrast to FID, these descriptions do not usually report a statement made by the protagonist, not even a silent but linguistically explicit thought event; they simply represent the mental state of a protagonist. The representations have a linguistic form, but it is not necessary for this form to come from the protagonist himself. A paradigmatic example is shown below:

- (59) The train was full of fellows: *a long long chocolate train with cream facings ...*
The telegraph poles were passing, passing.
(Joyce 1969: 20, cited in Brinton 1980, p.374)

The repetition of words and the content of phrases in italics above suggest that the perceptual experience of the protagonist is described from her point of view. Nevertheless, unlike in FID, there is no suggestion that the protagonist said overtly or even silently, in

¹⁴<https://www.theguardian.com/commentisfree/2021/sep/10/jeff-bezos-eternal-life-amazon-taxes>

¹⁵The view of FID as *imitation* (as opposed to being a *report*) is not trivial to square with the three formal theories of FID presented in Section 3, as these all view FID as being a more or less faithful report of a character's speech or thought. I will not be able to address this issue in this paper.

her thoughts, the phrases above. It is a description of the perceptual experience of the protagonist but with the description coming from the narrator. From now on, following Abrusán (2021b), I will refer to this class of items as *protagonist projection* (PP). Besides the difference in contextual licensing conditions, the main empirical difference between FID and PP is that the latter does not allow shifted temporal and locative indexical adverbs (cf. Stokke 2013):

- (60) a. [FID] *Tomorrow was Monday, Monday, the beginning of another school week!* (Lawrence, *Women in Love*, cited in Banfield 1982, p98.)
 b. [PP] A week ago, Ann was pacing around after coming home from the jeweller, disappointed and angry with John. *#Yesterday/the day before he gave her a ring studded with diamonds*, but they turned out to be glass. (Stokke 2013)

Just as with FID, we also find plural cases of PP. Observe the following journalistic example from 2019, when Greta Thunberg was widely tipped to be a favourite for the Nobel Peace Prize, which was awarded to Abiy Ahmed instead:

- (61) Clearly, Abiy’s win and Greta’s loss leaves countless angry hacks, pundits, shock-jocks, populists, provocateurs and alt-right conspiracists with an unexpected hole in their rant schedule. The crusaders had their already somewhat familiar backlashes against this 16-year-old climate activist all ready to go, and then *this absolute dog in the manger* goes and ruins it for them.¹⁶

The description of Abiy Ahmed as *this absolute dog in the manger* reports the view of the pundits, but there is no suggestion that they have actually said this nor that they would overtly endorse it.

Interestingly, we also find examples of PP with apparent quantification over the protagonist, such as the following:

- (62) Everyone *knew that stress caused ulcers*, before two Australian doctors in the early 80s proved that ulcers are actually caused by bacterial infection. (Hazlett 2010)
 (63) Beyond that, plenty of ageing Epstein buddies were involved in his web of abuse, accepting hospitality on “Paedo Island”, ferried in aboard his “Lolita Express” private plane. But they’ve all retreated into their money, their omertàs, and the timeworn *knowledge that reckonings are for women and other little people*.¹⁷

As was argued in Holton (1997), Buckwalter (2014), Stokke (2013) and Abrusán (2021b) wrt. (62), the content of knowledge above should be interpreted as protagonist projection, i.e. under a shifted perspective where it reports mistaken belief of some protagonist about having knowledge with the reported content.

In contrast to FID (cf. (14)), it is possible to have bound pronouns in examples similar to the above:

¹⁶<https://www.theguardian.com/commentisfree/2019/oct/11/greta-abiy-ahmed-nobel-peace-prize>

¹⁷<https://www.theguardian.com/commentisfree/2022/jan/04/loophole-dead-sex-trafficker-stay-classy-andrew-virginia-giuffre-epstein>

- (64) Every male CEO *knew that his success was due to his exceptional abilities*, until the financial crisis proved that they had just been lucky.

The reason for this difference is presumably that PP, unlike FID, does not have to apply to full sentences, but can be syntactically embedded.¹⁸ As a result, PP in the above examples is in the syntactic scope of the quantifier. When PP is not embedded, pronouns do not get bound pronouns either¹⁹, as can be seen if we create a plural version of (5):

- (65) All the girls stepped out of the boat. *The ground was shaking under their(*her) feet.*

How can we quantify over the protagonist, as seems to be required for the examples (62)-(64) above? Before we get there, let me briefly introduce the current analyses of PP.

5.1 Analyses of PP

As with FID, there is currently a debate in the literature about the correct analysis of PP and related phenomena. A bi-contextual account was proposed by Stokke (2013) and Abrusán (2021b), an operator account by Hinterwimmer (2017) and a modalised mixed quotation account by Stokke (2021b). They all import ideas from existing approaches to FID. I briefly review these approaches below. In the light of the discussion in the previous sections, I assume that cases of plural PP can be explained in a similar way we saw with examples of FID.

Hinterwimmer (2017) proposed to analyse PP (*viewpoint shifting* in his terminology) via a covert attitude operator (OP_{VS}).²⁰ This operator can attach above the TP level and so it does not need to take scope over the entire sentence.

$$(66) \quad \llbracket OP_{VS} \ 1 \ C_2 \rrbracket^{g,C} = \lambda P_{\langle ev, \langle s, t \rangle \rangle} . \lambda e . \lambda w . \\ PERC(e)(w) \wedge g(C_2)(e)(w) \wedge \textit{Experiencer}(e, g(1))(w) \\ \wedge \forall w' \in DOX_{(g(1))(\tau(e)+)(w)} [\exists e' [P(e')(w) \wedge \textit{overlap}(\tau(e), \tau(e'))]]$$

The operator OP_{VS} introduces two covert arguments: a covert pronoun (1) introducing a free variable that ranges over individuals and another covert pronoun (C_2) introducing a free variable that ranges over eventuality predicates. The value of these variables needs to be given by the context. The operator OP_{VS} then (i) takes an eventuality predicate P (e.g. the event of sitting on the train in (59)) and (ii) returns a predicate of perceiving events (C_2) (e.g. *see, feel, etc*) of which P is the theme, and finally (iii) updates the belief state of the experiencer ($g(1)$) of the perceiving event with $\exists e' [P(e')]$ and the condition that e' overlap with the perceiving event e . The operator OP_{VS} thus principally does two things: it introduces a covert perceiving attitude (that needs to be identifiable in the context) and it performs a belief update of the protagonist.

¹⁸The difference between PP and FID with respect to embeddability is one of the main arguments of Hinterwimmer (2017) for proposing an analysis on which PP is categorically different from FID; see section 5.1.

¹⁹Thanks to an anonymous reviewer for highlighting this point.

²⁰Note that Hinterwimmer's (2017) account is quite different from that of Sharvit (2008) in its technical and conceptual details, and does not presuppose it.

Since this proposal assumes that in order to interpret PP we need to infer an attitude of the protagonist, it can also explain why approximately the same elements can get a shifted interpretation in PP as the ones that can have a subject-oriented interpretation in the scope of attitude verbs.

Abrusán (2021b) proposes a rather straightforward extension of Eckardt’s (2014) account of FID that can handle PP as well. She assumes that the bi-contextual interpretation system developed by Eckardt (2014) can be pragmatically licensed not only by a presumed (overt or silent) utterance, as in FID, but also a contextually salient perceiving or believing event. The reason why a shifted interpretation of indexical adverbs such as *yesterday* is not available in PP is due to a presuppositional restriction on these adverbs that makes their interpretation contingent on being used in a speech act:

- (67) *yesterday*
- a. asserted content: $\lambda e.\tau(e) \subset \iota t. t \text{ DAY-BEFORE } (now)$
 - b. presupposed content: it occurs as part of a speech act by *auth.*

The presupposition hardwires the observation that such indexical adverbs require a mental state that involves (self-)talk, thus can only be used as part of a speech act. When we try to insert a temporal indexical adverb into a sentence that would otherwise be interpreted as PP, three different possibilities arise. One possibility is that the presupposition is accommodated, which turns the example into a case of FID, if this can be made sense of. Another possibility is that the indexical adverb is simply unacceptable on the intended reading. The third possibility arises due to the fact that PP can apply to constituents that are smaller than full sentences. If PP applies to the constituent below the adverb, the adverb itself will be interpreted outside the double context, in a single context, and it will represent the narrator’s point of view.

Protagonist projection requires us to complement the rules of story update with new ones. Abrusán (2021b) proposes that hearers/readers of the story update it with the asserted content p of sentences in PP as follows:

- (68) a. *If d is plausibly a context of perception, e.g. feeling, seeing, hearing, etc.:*
 $\lambda w. \text{ FEEL/SEE/HEAR/ETC. } (author, now, w, p)$
- b. *If d is plausibly a context of non-verbal (or implicit) belief:*
 $\lambda w. \text{ BELIEVE } (author, now, w, p)$

The story updates above predict that we update the context with what a character feels and perceives, but without attributing to her the words used to describe this perception.

Stokke (2021b) defends the proposal that passages rendered in PP should be interpreted as mixed quotation. However, instead of being cases of actual (mixed) quotation, as FID, expressions in PP correspond to the text that the protagonist could have used (given her actual dispositions and beliefs) to refer to the content of the expression. For example, in the example below the word *diamond* is modally (mixed-) quoted:

- (69) He gave her a ring studded with “diamonds”, but they turned out to be glass.
 (Holton 1997)

Following Maier (2015), (mixed) quotation introduces a two dimensional meaning. Modalising it means that the mention component of mixed quotation is embedded under an existential modal, as shown below:

$$(70) \quad \llbracket \text{“diamonds”} \rrbracket^{c,w} = \left\langle \begin{array}{c} P \\ \exists w' \in f(w,x) \text{ st. } x \text{ uses } \ulcorner \text{diamonds} \urcorner \text{ to refer to property } P \text{ in } w' \end{array} \right\rangle$$

Stokke (2021b) defines $f(x, w)$ as the set of worlds in which x has the dispositions and beliefs that x has in w . Given this, the above meaning captures the intuition that x could have used “diamonds” to refer to the property P (of being glass²¹), given the dispositions and beliefs (s)he has.²²

5.2 Quantification in PP

As observed above, PP allows (explicit) quantification over the protagonist, as in (62). The question that arises is how quantification and the perspective shift required for PP interact. In this case we can make use of the fact that PP allows to interpret embedded constituents from a shifted perspective. Let’s assume for concreteness that the quantifier undergoes movement and it adjoins to a sentence abstract (cf. Heim and Kratzer 1998). It is the lower sentence that is interpreted as PP.

- (71) a. Everyone knew that stress caused ulcers
 b. Everyone 1 [x₁ knew that stress caused ulcers]

The quantifier then needs to bind a variable inside the constituent interpreted as PP. Let us turn to examine how the various theories above can capture this.

Hinterwimmer (2017) As was mentioned above, the OP_{VS} operator can be inserted at a subsentential level, e.g. at TP. In the case of (62), it can then be inserted below the (raised) quantifier, attached to the lower sentence:

- (72) Everyone 1 [OP_{VS} [x₁ knew that stress caused ulcers]]

The abstractor will abstract over the variable 1 introduced by the OP_{VS} and also the variable created by QR; applying the quantifier results in the interpretation that ‘Everyone believed they knew that stress caused ulcers’, which is what we want.

Abrusán (2021b) Assume first that the lower sentence is interpreted as PP:

²¹Stokke (2021b) does not write it into the semantics that the protagonist thought the object was a diamond, rather this is only derived as a pragmatic inference.

²²Similarly to Maier (2015), this proposal does not make precise predictions about which elements can/cannot/have to be unquoted; though see discussion in Maier (2015). Note also that if FID is not understood as reporting a character’s speech but rather as imitation (as was discussed in Section 4.2), the line(s) distinguishing FID, modally interpreted FID and PP are rather blurred. At the same time, not all cases that have been called PP are easy to interpret as something that a character could have said (cf. Abrusán 2021b for discussion).

(73) Everyone 1 $\llbracket x_1 \text{ knew that stress caused ulcers} \rrbracket^{M,g,<C,d>}$

Interpretation with respect to two contexts triggers a contextual update rule, this time with *believe*. Suppose that *believe*, similarly to *say* above can be interpreted as a predicate over events and can combine with a shiftable character of a sentence:²³

(74) lexical entry of *believe*: $\lambda P \lambda e \lambda x. \text{BELIEVE}(x,e,w,P(e))$
 ‘The event (or state) of believing is the context relative to which the complement P is evaluated’

This is also the lexical entry that is used in the contextual update rule. First we need to abstract over the internal context variable to get the shiftable character of the lower sentence:

(75) $\lambda d. \lambda w. \text{KNEW}(x,w, \text{that stress caused ulcers})$.

As a result of combining (74) with (75), the event of believing becomes the context wrt. which the proposition that x_1 knew that stress caused ulcers is evaluated. Performing existential closure over the event variable and then quantifying over the subject we get the contextual update in (76):

(76) $\forall x_1 (\text{person}(x_1) \rightarrow \exists e. \text{BELIEVE}(x_1, e, w, [\lambda w. \text{KNEW}(x_1, w, \text{that stress caused ulcers})]))$

The context (i.e. the story) is then updated with the meaning that everyone believed that they knew that stress caused ulcers.²⁴

Stokke (2021b) Assume again that mixed quotation can apply to the lower sentence:

(77) Everyone 1 “[x_1] knew that stress caused ulcers”

The mixed-quoted interpretation of this lower sentence is as follows:

(78) $\llbracket \text{“}[x_1] \text{ knew that stress caused ulcers”} \rrbracket^{c,w} =$
 $\left\langle \begin{array}{c} R \\ \exists w' \in f(w, x_1) \text{ st. } x_1 \text{ uses } \ulcorner \dots \text{ knew that stress caused ulcers } \urcorner \text{ to refer to } R \text{ in } w' \end{array} \right\rangle (x_1)$

The variable x_1 in the two-dimensional meaning is then abstracted over, and quantified. Note that the result quantifies into both the use and the mention component. Assuming that R is interpreted as the predicate of believing that stress caused ulcers, the resulting meaning, roughly, expresses that everyone believed that stress causes ulcers and that they would have said “[I] know that stress causes ulcers” to express their belief.²⁵

²³This requires an extension of Eckardt’s (2015) analysis—which she reserves for verbs of saying and thinking with a corresponding mental speech activity—to other propositional attitudes.

²⁴The factive presupposition of *know* is understood as the presupposition of the author of the internal context. The internal context here is equated with the believing event, which is in the scope of a universal quantifier. Assuming, as standard, that presuppositions project universally in the scope of universal quantifiers, we predict that the author of every believing event needs to believe the content of the factive presupposition, here that stress caused ulcers.

²⁵That everybody thought they knew that stress caused ulcers might arise as a pragmatic inference on this view.

6 Conclusion

When we interpret examples of perspective shift such as FID and PP, we need to infer large amounts of information: whether perspective shift is indeed at play, who is the protagonist whose viewpoint is adopted and often we also need to infer an implicit attitude ascription. When the inferred protagonist is a plurality, even more semantic and pragmatic reasoning needs to happen at the linguistic underground: the anaphoric (e-type) null pronoun needs to be resolved and the plural predication of attitude attribution needs to be interpreted (collectively, distributively, etc.), which as we saw, are highly non-trivial issues. It is remarkable that we are able to do all this with hardly any overt linguistic material. That we can do it, is by exploiting existing mechanisms for the interpretation of anaphora and plural predication.

In this paper I observed a number of new plural and (apparently) quantified examples of *free indirect discourse* (FID) and *protagonist projection* (PP). I analysed them within major current theoretical approaches, proposing extensions to these approaches where needed. In order to derive the wide range of readings observed with plural protagonists, we rely on existing mechanisms for the interpretation of plural anaphora and plural predication.

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