

Reciprocal questions and the pragmatics of argument reversing verb phrase ellipsis¹

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Abstract. Adding to the literature on pragmatics-sensitive ellipsis, the current paper examines cases of argument mismatches in verb phrase ellipsis involving pairs of participants, termed *argument reversals* (ARs), and argues that they are primarily possible in situations involving implicit questions of reciprocity or actuality. The analysis put forth captures this generalization by arguing that ellipsis in these cases may be pragmatically licensed by accommodating a *reciprocal* or *actual* Question Under Discussion (r/aQUD) structure (Roberts, 2012). The emergence and resolution of these implicit questions is operationalized using the table model (Farkas and Bruce, 2010). In light of their unique structural and pragmatic characteristics and the observation that existing theories of AR, which implement standard licensing conditions on ellipsis, are insufficient for capturing their pragmatics, some directions forward for addressing the issue of the grammaticality of these constructions are discussed.

Keywords: ellipsis, questions under discussion, pragmatics, speech acts

1. Introduction

Although verb phrase ellipsis (VPE) is normally thought to require some type of identity between antecedents and ellipsis sites, recent work on argument mismatches in VPE, or argument-reversing VPE (AR-VPE), calls into question existing conceptions of the nature of the identity condition. In cases of AR-VPE, pairs of participants intuitively reverse roles across the antecedent and ellipsis clauses. These mismatches have been said to involve a *salient other* relation between participants (Chung, 2000) and to be especially available in situations of love, conflict, and negotiation, as in (1) (Charnavel, 2019).

While existing identity conditions allow for changes in the form of objects within the ellipsis site (e.g. Vehicle Change in Fiengo and May (1994)), AR-VPE is unique in that it requires a licensing mechanism which allows for mismatches in *reference*. The examples in (1) with indexicals involve identity in form, but not reference (indicated via mismatching indices).

- (1) a. A: I₁ love you₂. *love*
 B: I₂ do <love you₁>, too.
 b. A: I₁ don't want to be divorced from you₂. *conflict*
 B: Well, I₂ do <want to be divorced from you₁>!
 c. A: I₁ 'll negotiate with you₂. *negotiation*
 B: Okay, I₂ will <negotiate with you₁>, too.
- (Chung, 2000)

Though the literature has primarily focused on ARs between interlocutors (Rebuschi, 1997; Bevington, 1998; Chung, 2000; Charnavel, 2019), similar mismatches are possible with proper

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names (Chung, 2000; Charnavel, 2019; Stockwell, 2017, 2020). While the examples in (2) involve non-identity of both form and reference, the general schema where participants A and B reverse roles across the antecedent and ellipsis clauses remains.

- (2) a. John₁ wanted to dance with Mary₂, but she₂ didn't <want to dance with him₁>.
 b. John₁ wanted to meet Mary₂, and she₂ did <want to meet him₁>, too.
 (Stockwell, 2020)

Note that these examples do not obviously fit into the situational classes defined for those in (1). Whether (2a) should qualify as a situation of love, conflict, or some other category remains unclear. (2b), which comments on John and Mary's desires with respect to meeting one another, similarly does not seem to qualify as belonging to any of the previously mentioned categories. This highlights an open issue in the literature on AR-VPE, namely that previous analyses lack specific proposals to account for the pragmatic component of these mismatches. That is, they leave open two issues: (i) whether AR-VPE is restricted to particular types of situations, or more generally, what the precise pragmatic restrictions on AR are, and (ii) why situations of love, conflict, and negotiation in particular lend themselves so well to the licensing of these mismatches.

While previous accounts have dealt with interlocutor (1) and proper name (2) cases separately, the current approach provides a unified pragmatic account of AR-VPE based on the Question Under Discussion (QUD). The core idea holds that given the speaker's commitment to the antecedent clause, which must express a particular type of relation between a pair of participants², AR-VPE of R(b,a) based on an antecedent R(a,b) is licensed only if the pragmatic context is such that the question of whether R(b,a) holds is made salient by the speaker's utterance. The account assumes a general pragmatic licensing mechanism, but one that requires an explanation of the circumstances which lead to the emergence of the relevant implicit questions. In the present paper, I discuss two situational types that are especially congenial to licensing AR-VPE: there are cases of reciprocity, governed by a general behavioral principle called the *Norm of Reciprocity* (Gouldner, 1960), and cases of actuality, which involve joint actions between participants (Stockwell, 2020; Grant et al., 2012).

The analysis in §3 develops a version of this proposal within the table model (Farkas and Bruce, 2010), where independent social norms coupled with commitment by a speaker to the antecedent clause indirectly raises the question of whether R(b,a) via accommodation of a *reciprocal* or *actual* Question Under Discussion (r/aQUD) structure (Roberts, 2012), which is placed on the table and may be responded to by one's conversational partner.

The paper then has three goals: empirically, to describe the pragmatic restrictions on argument reversing VPE and to re-examine several claims made in previous accounts (§2); theoretically, to provide a pragmatic framework for capturing these restrictions (§3); and speculatively, to comment on how AR-VPE is unique compared to cases of standard and sloppy VPE (§4).

²Note that the pair of participants includes the speaker and addressee in the indexical cases but involves some other mentioned pair known to the speaker and addressee in the proper name cases.

2. The empirical landscape

The previous literature has primarily identified two kinds of environments that seem to license AR-VPE: (i) cross-speaker indexical cases involving situations of love, conflict, and negotiation (Charnavel, 2019), as in (1), and (ii) within-speaker third person cases involving symmetry (Stockwell, 2017, 2020), as in (2). Previous proposals have dealt with these cases entirely separately, building analyses that account for one or the other type of environment. In the current section, I address each case in turn, arguing that AR-VPE of both types can be unified by a common pragmatic core, namely a principle involving reciprocity that influences the Question Under Discussion (QUD) structure. In addition, I discuss a third type of environment for licensing AR-VPE which shares many of the type-(ii) properties but additionally requires verum focus (Stockwell, 2020), leading to a related but different pragmatic source involving actuality. I argue that this environment, too, can be captured under a QUD-based view of argument mismatches. In all three cases, the raising and partial resolution of implicit questions leads to a situation where the need to address an unresolved QUD overrides the identity condition on VPE. This occurs only given sufficient contextual support for the relevant discourse structure, with some types of environments requiring more support than others. In effect, this allows the discourse structure to serve as an antecedent for a mismatching ellipsis in the appropriate situational context, namely those involving reciprocity or actuality between pairs of participants.

2.1. Love, conflict, and negotiation

Charnavel (2019) formalizes the *salient other* relation as an e-type construal of indexicals under the relation INTER, corresponding to the description *y is the interlocutor of x*, where *x* and *y* are restricted to the interlocutors of a speech context. Represented informally in (3), the indexical *you* corresponds to *my interlocutor*. The analysis assimilates AR-VPE with sloppy identity-VPE via a requirement on variable binding. Thus, the INTER relation enforces identity at LF, where the antecedent and ellipsis clauses correspond to: *x loves x's interlocutor*. I return to the structural assumptions of the analysis shortly, first addressing the pragmatics.

- (3) A: I_i love you (= my_i INTER).
B: I_k do <love you (= my_k INTER)>, too.

This approach straightforwardly accounts for the examples in (1), but without assuming additional pragmatic restrictions, it cannot handle examples involving indexicals that do not readily lend themselves to AR readings.

- (4) a. A: I saw you.
B: ?I did, too.
b. A: I was hoping I would see you here.
B: I was, too.

- (5) Context: *Claire is talking to a neighbor.* (Charnavel, 2019)
Claire: I came across your daughter yesterday.
Neighbor: ?I did, too.

Consider the contrast between (4a) and (5) on the one hand, and (4b) on the other. In (4a), which

lacks a clear interpretation, a reciprocal seeing-situation is not made contextually relevant, rendering the AR reading unavailable. Note, however, that when the relevant situation concerns identical or contrasting desires between the participants, such as mutual desire of a meeting in (4b) or the declaration of reciprocal affection in (1a), the AR reading is available. In (5), the strict interpretation (where the neighbor came across their own daughter) is most salient. Here, too, the context is too general to support an “other’s daughter-seeing” situation. As a result, Charnavel (2019) proposes that the situational restrictions on AR are “love, conflict, negotiation, or any other specific interaction between interlocutors”. A pragmatic theory of AR, then, must explain why (4a) and (5) constitute non-specific interactions between interlocutors.

In the basic cases, I suggest that speech acts between interlocutors of the type exemplified in (1) evoke implicit questions of reciprocity, which the addressee may respond to. Taking (1a) as an example, the basic idea proceeds as in (6).

- (6) **A:** I love you.
 $\leadsto$ **rQUD:** *Do A and B love each other?* >>
 {**aQb:** *Does A love B?*,
 bQa: *Does B love A?*}
 B: I do <love you>, too.

Though the ellipsis in participant B’s response is in violation of typical licensing conditions (see the current section and §2.2 for arguments against the existing approaches that maintain identity), it may be pragmatically licensed³ by accommodating a reciprocal Question Under Discussion (rQUD) structure. Informally, participant A’s utterance indirectly gives rise to the rQUD *Do A and B love each other?*, which may be answered by the argument-reversing subquestions *Does A love B?* and *Does B love A?*. A’s utterance answers the former and gives rise to the latter. B’s utterance then answers the latter question.

In sum, I argue that speech acts involving avowals, such as the situations of love, conflict, and negotiation in (1), lead to the accommodation of rQUDs. In particular, the initiating speech act in these exchanges serves to raise and partially resolve the rQUD structure (i.e. A’s contribution in (6) both evokes the rQUD and offers an answer to subquestion aQb), leaving the remaining subquestion (bQa) unresolved. In effect, then, such speech acts indirectly raise questions targeted towards participant B for the purposes of resolving the overall rQUD.

The question of where rQUDs come from, however, remains. I propose that for the interlocutor ARs in (1), rQUDs arise due to a general behavioral principle termed the *Norm of Reciprocity* (NoR) (Gouldner, 1960), which triggers a social pressure to reciprocate or retaliate in kind (7).

- (7) **The Norm of Reciprocity** (modified): Given a pair of participants A and B, any act performed by A for or on B that is associated with some positive or negative perceived kindness value, k , will trigger a pressure for B to respond in equal measure (i.e. by matching k in polarity and value)⁴.

³Or “rescued”. See §4.

⁴The NoR has been extensively studied in the psychology and behavioral economics literature (Gouldner, 1960; Perugini et al., 2003; Falk and Fischbacher, 2005; Burger et al., 2009; Carter, 2014). Following observations that humans and social animals have evolved to instinctively engage in reciprocal and retaliatory behaviors, the NoR highlights the disposition to reciprocate given a reciprocal or retaliatory initiating act even when doing so incurs no direct benefit. Sometimes framed in terms of the perceived kindness of an initiating act, particularly between

The NoR, which captures a generalization about human behavior in interpersonal interactions, is sensitive to both physical acts, such as favors and injuries, as well as verbal ones, such as compliments and insults, with positive or negative effects on another (these effects need not have tangible consequences) that elicit a matched response. In the avowal in (6), this amounts to a pressure to contribute a reciprocal (or affirmative) response with respect to subquestion bQa. In general, avowals, promises, and commitments can readily be seen as speech acts that request a certain kind of action in kind. For expressions of affection in particular, the pressure to reciprocate has been discussed at length from the perspective of Politeness Theory (Erbert and Floyd, 2004; Floyd, 2006; Brown and Levinson, 1978).

Crucially, the NoR is a violable principle. This is evident from the fact that participant B's response may either comply with or violate the NoR. (2a), which constitutes a case of violation, is exemplified in (8). Note that the polarity of the rQUD structure matches that of participant A's utterance. In cases that violate the NoR, participant B contributes a negative response with respect to subquestion bQa.

- (8) **A:** I don't want to be divorced from you.
 ~ **bQa:** *Does B not want to be divorced from A?*
 B: Well, I do <want to be divorced from you>!

Under this view, situations of conflict can be divided into those that violate the NoR, as in (8), and those that comply with it (e.g., **A:** I hate you! **B:** Well, I do, too!). Thus, we can conceive of AR-VPE with interlocutors as involving *reciprocal situations* governed by the Norm of Reciprocity, i.e. those situations that (i) involve pairs of participants acting for or on one another and (ii) introduce a social pressure to respond in kind. Crucially under this view, a reciprocal situation does not necessitate a reciprocal response. Instead, an initiating act by one member of a pair that triggers the NoR leads one to wonder whether actions, feelings, or desires between partners are reciprocal. Thus, the effect of the NoR in situations of love, conflict, and negotiation between interlocutors is to evoke implicit questions concerning reciprocity. By virtue of accommodating an rQUD, AR-VPE is pragmatically licensed.

Equipped with this notion of reciprocity, we can better understand two restrictions that Char-navel (2019) suggests concerning (i) c-command and (ii) the status of proper names. I first focus on an empirical point made by Char-navel (2019) that motivates the variable binding component of the analysis, namely a requirement on c-command between indexicals. The justification is examples like the following (9), which are seemingly unacceptable under an AR reading.

- (9) Context: *Paul is talking to his sister Julie.*
 Paul: [The man I₁ hate] loves you₂.
 ~ **bQa:** *Do you love the man I hate?*
 Julie: *[The woman I₂ hate] does not <love you₁>.

Notice two properties of (9): (i) it does not adhere to the NoR's restriction on pairs of participants (there are four involved) and (ii) it does not involve any sensible notion of reciprocity. Though the NoR is not expected to apply to the antecedent clause in (9), if it were to, the ellipsis clause would not constitute an informative or felicitous answer to the corresponding bQa.

pairs of participants, the NoR identifies a tendency to respond in kind when a deed with a positive or negative kindness value has been enacted upon a member of a pair.

In contrast, when a pair of participants is involved in a situation of mutual conflict, AR-VPE that lacks c-command is in fact possible with both interlocutors (10a) and proper names (10b):

- (10) a. Context: *Two friends are fighting.*
A: [The things you said] made me feel excluded.
B: Well, the things you said did <make me feel excluded>, too.
- b. Context: *Two parents are discussing their children.*
A: [The things Ossie said] made Ayla feel excluded.
B: Well, [the things Ayla said] did <make Ossie feel excluded>, too.

Turning to the second point, Charnavel (2019) notes that proper name ARs are possible, though the INTER analysis was only built to deal with cross-speaker interlocutor examples, as the results of an acceptability judgement study suggest that proper name ARs are generally degraded. As the INTER relation is not equipped to handle proper names, Charnavel (2019) tentatively proposes the relation OTHER, a non-indexical counterpart to INTER. The description for OTHER roughly corresponds to *y is the salient other of x*, where the relevant pair of participants is determined via contextual domain restriction. This function is proposed to account for a subset of proper name cases, as in (11). As in the INTER case, the antecedent and ellipsis clauses correspond to *x owes x's salient other* at LF.

- (11) **Tess:** Matthew_i owes Clarissa (= his_i OTHER). (Charnavel, 2019)
Sean: Clarissa_k does <owe Matthew (= her_k OTHER)>, too.

Example (10b) suggests that the binding analysis is unequipped for proper name examples as well. That aside, considering the role of reciprocity reveals that examples like (11) are degraded relative to the interlocutor examples for the same reasons as the unlicensed interlocutor examples in (4a) and (5): the context does not set up a reciprocal-owing situation in advance of the ellipsis clause. Note that for the interlocutor examples, it is the antecedent clause that triggers the NoR, which gives rise to the QUD structure. In §2.2-2.3, I argue that the same is true of other cases of acceptable AR-VPE with proper names. As a result, QUD accommodation for examples such as (11) must proceed differently; I return to this point in §4. This suggests an alternative explanation for the acceptability contrast reported by Charnavel (2019), though a systematic experimental comparison of proper name ARs has yet to be conducted.

2.2. Reciprocity in joint actions

I now turn to the relevance of reciprocity for the type of proper name cases given in (2), repeated here as (12). These cases do not necessarily seem to involve situations of love or conflict. Though they could potentially be construed as cases of negotiation, I argue that they are better characterized as situations of desire with respect to joint actions, which inherently involve reciprocity. Based on (12), as well as the ungrammaticality of (13), Stockwell (2017, 2020) argues that AR-VPE requires symmetry within the embedded clause. (12a) and (12b), whose embedded clause predicates are *dance-with* and *meet* respectively, result in acceptable cases of AR-VPE, whereas (13), containing the non-symmetrical predicate *criticize*, does not.

- (12) a. John₁ wanted to dance with Mary₂, but she₂ didn't <want to dance with him₁>.
b. John₁ wanted to meet Mary₂, and she₂ did <want to meet him₁>, too.

- (13) *John criticized Mary, even though she wasn't supposed to.

Despite the ungrammaticality of (13), as we've already seen, AR-VPE is not subject to a strict requirement on symmetry. Consider the example containing *criticize* in (14), which can be made acceptable when the context specifies a mutually antagonistic relationship between participants, as such a context renders a reciprocal desire for criticism more plausible.

- (14) Context: *Finny and Mara are coworkers with a longstanding rivalry.*
Finny was eager to criticize Mara at the meeting, and she was, too.

The unacceptability of (13) may simply be due to the fact that implicit causality verbs, such as *criticize*, have been argued to give rise to other types of implicit questions, e.g. *Why did John criticize Mary?* (Kehler and Rohde, 2017). In any case, it should be noted that the relevant difference between (13) and (14) lies in (13)'s lack of contextual support for a reciprocal situation. Conversely, symmetry alone is insufficient for licensing AR-VPE. Consider (15):

- (15) a. John wanted to dance with Mary, and in the end, she DID⁵ <dance with him>.
b. Context: *John and Mary are in the same biology class and are waiting for their teacher to pair them with lab partners.*
?John hoped to be paired with Mary, and in the end, she WAS <paired with him>.

While (15a), which contains the symmetrical predicate *dance-with* and comments on the eventuality of John's desire, results in an acceptable instance of AR-VPE, (15b) is marginal at best, despite the use of symmetrical *pair-with*. The situation described in (15b) no longer involves reciprocity, as the biology teacher is the agent of John and Mary's pairing in this case. Note that a similar example without verum focus results in an acceptable AR:

- (16) John hoped to be paired with Mary, and she did <hope to be paired with him>, too.

This again shows the relevance of reciprocity. When the antecedent and ellipsis clauses comment on the participants' identical or contrasting desires with respect to joint actions, as in (12) and (16), the AR reading is available, regardless of symmetry. When the issue of reciprocity is not made salient by the context, the AR reading is unavailable, as in (13) and (15b).

Finally, the role of reciprocity is evident from the preference for pairwise interactions between participants in all of the cases of AR-VPE I have discussed up to this point (including the interlocutor cases). Consider the following example from Stockwell (2017), where the reversal is restricted to the participants of the potential dancing situation. In (17), only the reading where John (as opposed to Bill) is the referent of the third-person pronoun is acceptable.

- (17) Bill₁ wanted John₂ to dance with Mary₃, and in the end, she₃ DID <dance with him_{*1/3}>.

Similarly in cases involving ditransitive predicates, there is a two-participant requirement, as exemplified by the contrast between (18a) and (18b). When three participants are involved, as in (18b), the intended interpretation of the ellipsis site is unclear.

- (18) a. Ossie needed to be introduced to Ayla, and she did, too.
b. ?Ossie introduced Ayla to Mara, and {Ayla, Mara} did, too.

⁵Verum focus on the licensing head of the ellipsis site restricts the interpretation to the embedded clause (Stockwell, 2017, 2020). Note that the resulting interpretation still involves a reversal. I return to the significance of these examples under the current approach in the following section (§2.3).

This preference for pairwise interactions has been noted by Stockwell (2017) and is consistent with the intuition behind the *salient other* relation (Chung, 2000). This further supports the necessity for a notion of reciprocity between pairs of participants in the licensing of AR-VPE.

Here, I digress briefly to discuss Stockwell’s (2017) analysis of (17), which argues for a minimal event-based licensing condition, also requiring symmetrical predicates. Informally, the antecedent clause makes salient an event *e* (a John-and-Mary-dancing event), which is semantically equivalent to the minimal event denoted by the antecedent (John-dancing-with-Mary) and ellipsis clauses (Mary-dancing-with-John). As I’ve already argued against a restriction on symmetrical predicates, I do not discuss the mechanics of this account here⁶. Instead, I note that the pragmatic intuition behind this account (namely that AR-VPE is restricted to co-participants of the same event) is a rather intuitive formalization of the *salient other* relation. In order for the assumed entailment relationship to go through, however, Stockwell (2017) must stipulate the salience of the relevant event on the basis of the entire antecedent clause. Furthermore, Stockwell’s (2017; 2020) accounts do not capture the need for reciprocal situations between participants. The analysis I propose, on the other hand, argues that the antecedent clause is responsible for evoking rQUDs which may be accommodated by the conversational participants, without assuming a modified licensing condition.

The informal sketch of the proposal for these cases works much in the same way as the interlocutor examples. Taking (12a) as an example, AR-VPE is licensed via accommodation of an rQUD, as in (19), where the antecedent clause evokes the rQUD *Did John and Mary want to dance with each other?* Subquestions aQb and bQa are then answered by each clause.

- (19) John wanted to dance with Mary...
 ↪ **bQa:** Did Mary want to dance with John?
 ...and she did <want to dance with him>, too.

The shape of the QUD structure for (19) is identical to that of the interlocutor cases discussed in the previous section. In fact, I argue that in both cases, the rQUD arises from a common source: the Norm of Reciprocity. In the proper name cases, however, the relevance of the NoR is not necessarily as obvious. In the previous section, I argued that in interpersonal interactions between interlocutors, the NoR can trigger an expectation for a particular type of response, which leads to accommodation of a particular QUD. That is, the NoR prompts a request for a reciprocal response in interlocutor ARs.

As it is a general behavioral principle, it can also be imposed on our expectations of others’ behaviors, specifically in the case of reports on third parties such as those in (12). As such, proper name examples involving participants’ desires with respect to joint actions can be thought of as ‘second-order’ cases of the NoR, where the relevant pair of participants is not the speaker and addressee, but rather some contextually relevant pair of participants known to the speaker and addressee. In second-order cases, the antecedent clause leads the speaker and addressee to wonder whether the behavior of the mentioned pair of participants complies with the NoR. Consistent with theories of affection exchanges, e.g. Expectancy Violations Theory (Burgoon and Hale, 1988), this relies on the idea that humans track their own behavior as well as the behavior of others according to social expectations and that deviations from these expectations are

⁶I refer the interested reader to Stockwell (2017) for details and to Stockwell (2020) for an alternative account which relies on Rooth’s (1992) Focus Membership Condition

treated as significant, perhaps for the purpose of maintaining good standing in one's individual relationships and larger social circle (Floyd, 2006).

Thus, in both interlocutor and proper name cases, the rQUD arises from the Norm of Reciprocity. The NoR is not, however, the only mechanism for licensing AR-VPE. The following section examines Stockwell's (2017; 2020) examples involving verum focus in more detail, as these cases need not involve reciprocity between participants per se, but rather whether certain desires or events come to fruition. Nevertheless, I will argue that these cases, too, can be explained under a QUD-based account.

2.3. Actuality in joint actions

Under an account where mismatching VPE is licensed by QUD accommodation, two predictions follow. First, AR-VPE might be possible under QUDs other than rQUDs. Second, QUD accommodation should allow other types of VPE mismatches. The current section provides evidence in favor of these predictions and extends the general QUD-based account to AR-VPE cases involving verum focus (Stockwell, 2017, 2020) by drawing a connection to the literature on (i) passive-active and (ii) transitivity (Stockwell, 2020) mismatches in VPE and (iii) implicit questions concerning *actuality* (Grant et al., 2012; Clifton and Frazier, 2018).

Recall Stockwell's (2017, 2020) examples involving verum focus, repeated as (20), where the interpretation of the ellipsis site is restricted to the embedded clause, as in (20a). There is an important difference between these cases and the ones involving reciprocity discussed in §2.2. Whereas the previous cases involving joint actions compare or contrast participants' needs or desires with respect to a *possible* joint action, examples like those in (20) contrast one participant's desire for a joint action with the eventual outcome of that action.

- (20) John wanted to dance with Mary, and in the end, she DID.
a. ...she DID <dance with him>.
b. *...she DID <want to dance with him>.

Intuitively, these cases do not correspond to the types of rQUD structures I discussed previously, as the ellipsis clause, *she DID <dance with him>*, does not directly contribute an informative answer to the question *Did Mary want to dance with John?* However, reciprocity does seem relevant to a number of examples involving verum focus, e.g. (15) and (20). In (20), the state of affairs described may allow one to infer that John's desire was reciprocated by Mary due to her participation in the joint action, if voluntary. This is evident from the contrast between (21a) and (21b). In (21a), the implication that the NoR was satisfied is cancelled by the second elliptical clause. In (21b), however, where the second elliptical clause reinforces the reciprocal implication, the result is infelicitous due to redundancy. Similarly, (15b) exemplified a case where reciprocity was necessary for the AR-VPE reading with verum focus.

- (21) John wanted to dance with Mary...
a. ...and in the end, she DID, though she didn't want to.
b. #...and in the end, she DID, and she wanted to.

Despite this, reciprocity is not a necessary ingredient for the verum focus examples. Consider

the antecedent clause of (22) alone, where John's need to be introduced does not trigger the Norm of Reciprocity. Nevertheless, the AR-VPE reading under verum focus is available.

(22) John needed to be introduced to Mary, and in the end, she WAS <introduced to him>.

The lack of need for reciprocity in some of these cases suggests a departure from licensing by rQUD. Instead, the ellipsis clauses in these cases seem to correspond to questions concerning actuality, such as *Did John and Mary (actually) dance?* One further observation concerning the relevance of intensional embedding is necessary to motivate this claim. Stockwell (2017, 2020) argues for a requirement on intensional embedding predicates (e.g. *want, need, yearn, should, could*, etc.) in the licensing of AR-VPE (note, however, that this is not true of the full range of examples discussed in the present paper). Stockwell's list, however, contains considerable overlap with the intensional predicates argued by Grant et al. (2012) and Clifton and Frazier (2018) to trigger implicit questions concerning actuality, which in turn serve to rescue⁷ another type of mismatching ellipsis, namely passive-active mismatches in VPE.

Following the observation that passive-active mismatches containing intensional embedding (23a) are relatively more acceptable than those without (23b), Grant et al. (2012) suggest that intensional triggers give rise to implicit questions concerning actuality (aQUDs), as in (23b), and that correspondence with these QUDs may rescue an ungrammatical ellipsis. I discuss their experimental results and the details of their account no further here, but refer the interested reader to Grant et al. (2012) and Clifton and Frazier (2018) for more details.

- (23) a. *This information was released, but Gorbachev didn't <release the information>.
 b. ?This information *should* have been released...
 ~ aQUD: *Was the information actually released (by someone)?*⁸
 ... but Gorbachev didn't <release the information>. (Grant et al., 2012)

Applied to the AR-VPE example in (20a), the rQUD and aQUD-based accounts operate in an analogous manner. Notably, the aQUD is associated with two types of mismatches identified by Stockwell (2020): transitivity mismatches (24a), where a transitive clause serves as the antecedent for an intransitive ellipsis clause that targets the aQUD itself, and AR-VPE under verum focus (24b), which targets subquestion bQa, as in the rQUD cases. In (24), the correspondence between QUD and ellipsis clause is indicated with matching underline type (dashed for the transitivity mismatch and solid for AR-VPE). Thus, the two predictions I outlined at the outset of this section, namely that (i) AR-VPE is licensed by multiple types of QUDs and (ii) QUDs may license multiple types of mismatches in VPE, are both borne out.

- (24) John wanted to dance with Mary...
 ~ aQUD: *Did John and Mary (actually) dance? >>*
 {aQb: *Did John dance with Mary?*,
 bQa: *Did Mary dance with John?*}
 a. ...and in the end, they DID <dance>. *transitivity-switching VPE*
 b. ...and in the end, she DID <dance with him>. *AR-VPE with verum focus*

⁷For Grant et al. (2012), who assume a standard syntactic identity condition, passive-active mismatches are ungrammatical, but may be repaired by a limited syntactic editing process that consults the discourse structure. One possibility is that AR-VPE is also ungrammatical but may be salvaged by the same type of pragmatic rescuing procedure. I return to a discussion of this possibility in §4.

⁸The source and form of these QUDs are left underspecified by Grant et al. (2012).

One last note concerns the general role of focus in AR-VPE. Note that the reciprocal cases (with mismatching polarity⁹) bear contrastive focus on the ellipsis clause subject (25a), while the actual cases bear verum focus on the ellipsis site licenser (25b).

- (25) a. John wanted to dance with Mary, but SHE didn't.
b. John wanted to dance with Mary, and in the end, she DID.

The antecedent clause in (25) evokes both an rQUD and aQUD. The position of focus in the ellipsis clause then serves to select the relevant QUD by signaling a cue to the to-be-accommodated discourse structure, following the general correspondence between focus and questions (Roberts, 2012). This process is detailed in the following section (§3).

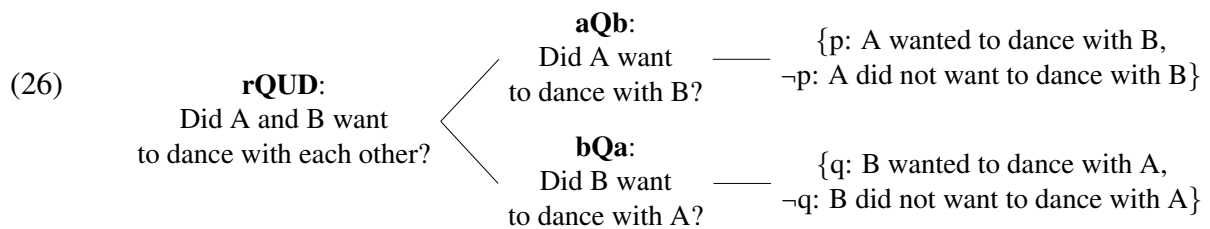
I have argued here that rQUDs triggered by the Norm of Reciprocity are not the only types of QUDs that may license AR-VPE. In addition, the same aQUDs that are argued by Grant et al. (2012) to ameliorate the unacceptability of passive-active mismatches also license two additional types of VPE mismatches: (i) cases of AR-VPE bearing verum focus and (ii) transitivity-switching mismatches (Stockwell, 2017, 2020). Taken together with the claims made by Grant et al. (2012), this suggests that discourse anaphora can explain three types of argument structure mismatches in verb phrase ellipsis.

3. Analysis

In the analysis to follow, I focus on the AR-VPE cases involving reciprocity, adopting a modified version of the table model (Farkas and Bruce, 2010), which interfaces with QUD theory (Roberts, 2012). In sections §3.1-§3.2, I describe each model. §3.3 provides a derivation for an interlocutor example and discusses the mechanics of third person cases. §3.4 considers the implications of the modifications to the table and some limitations of the current approach.

3.1. QUD theory

Following Roberts (2012), Büring (2003), and others, I assume that Questions Under Discussion serve as the organizing units of discourse. These QUDs are usually implicit and are structured hierarchically such that parallel subquestions (those that are sisters in a discourse tree) may serve as a strategy for a speaker to resolve the question that dominates them.



(26) models the basic QUD structure for reciprocal situations¹⁰ involving both interlocutors

⁹See §4 for a continued discussion of polarity and focus.

¹⁰Note that overt rQUDs may also license AR-VPE:

and third parties. The rQUD *Did A and B want to dance with each other?* dominates the polar subquestions aQb and bQa, which correspond to participant A and B's desires, respectively. I assume a Hamblin (1973) semantics of polar questions, where their denotation is a set containing two alternatives, denoted in (26) by $\{p, \neg p\}$ for aQb and $\{q, \neg q\}$ for bQa.

The circumstances under which accommodation of the rQUD structure may proceed is described by the Discourse Reciprocity Principle, given in (27).

- (27) **Discourse Reciprocity Principle:** If a discourse move m raises whether $R(a,b)$, where R is any relation expressing a reciprocal situation (i.e. a situation governed by the NoR), then m concurrently raises the reciprocal question, whether $R(a,b)$ & $R(b,a)$.

Informally, the principle operates as follows: given an initiating discourse move that describes a situation that invokes the Norm of Reciprocity, the NoR conspires to evoke the rQUD by raising the issue of whether the situation described is reciprocal. In doing so, the rQUD structure is added to the list of issues to be addressed by the participants. In particular, the raising and partial resolution of the QUD by participant A's move indirectly raises whether $R(b,a)$, as subquestion bQa is the remaining question needed to resolve the reciprocal superquestion.

3.2. The table model

I operationalize the raising, accepting, and addressing of the reciprocal issue within the table model (Farkas and Bruce, 2010), which was originally proposed to derive responses to assertions and polar questions. Underlying, Farkas and Bruce (2010) assume QUD theory to be operating in the background of conversations. Here, I assume that implicit QUDs can be added to the table model's discourse components, allowing participants to respond to them.

The basic context structure of the table has four components: (i) the Table, (ii) discourse commitments, (iii) the common ground (*cg*), and (iv) the projected set (*ps*). The heart of the model is the Table, a stack of issues overtly raised by either of the participants. Alongside that, the model tracks the individual discourse commitment lists of each participant. The issues publicly raised by either participant are first added to the table for discussion, then moved to the *cg* once resolved. The *ps* reflects the potential futures of the conversation for each context state, which are constrained by the possible responses to the content on the table during each state. Under this model, the goal of conversation is to reach a joint commitment with one's interlocutor, such that information is moved from the table to the *cg* until the table reaches a 'stable state' (i.e. there are no further issues to be resolved). I propose that an additional goal of conversation in reciprocal situations is to reach a reciprocal commitment with one's interlocutor. That is, the pressure induced by the NoR to contribute a reciprocal response, if satisfied, results in a joint commitment with respect to the rQUD.

The final detail of the table model pertinent to the analysis to follow is an explanation of the polarity features proposed by Farkas and Bruce (2010) and Roelofsen and Farkas (2015), which were originally meant to derive the distribution of polar response particles. Two types of polarity features are proposed: absolute features ($[+]$, $[-]$), which correspond to the polarity of

- (i) **A:** Did Ossie and Ayla want to dance with each other?
B: Well, Ossie did, but Ayla didn't.

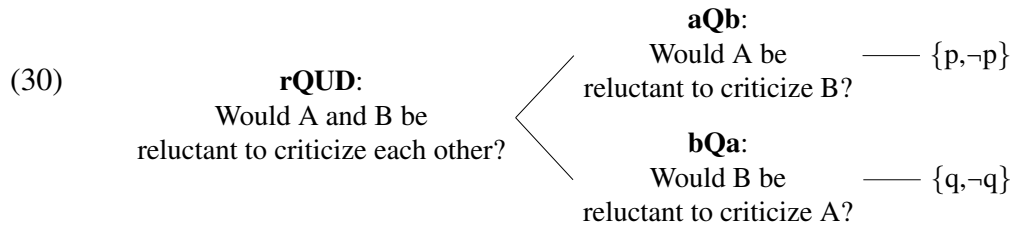
the responding assertion, and relative features (*[agree]*, *[reverse]*), which indicate whether the initiating and responding assertions match in polarity. These features are exemplified in (28). For current purposes, I focus only on the relative polarity features (see Farkas and Bruce (2010) for more detail). Note that responding moves can then be of two types: *confirming*, when they bear the *[agree]* feature, or *reversing*, when they bear the *[reverse]* feature. In the following section, I adopt the relative polarity features introduced here in order to indicate compliance with or violation of the Norm of Reciprocity.

- (28) Anne: Is Sam home? (Farkas and Bruce, 2010)
 Ben: Yes, he is. [*agree*, +]
 Connie: No, he isn't. [*reverse*, -]

3.3. Deriving reciprocity

Beginning with the interlocutor cases, I exemplify the dynamics of the discourse in (29) from Chung (2000) within the table model and assume the corresponding QUD structure in (30).

- (29) A: For instance, I would be reluctant to criticize you in public. (Chung, 2000)
 B: I wouldn't be.



I assume that implicit questions may be added to the table and responded to directly by contributing a confirming or reversing move relative to the unresolved subquestion in the rQUD structure. In (29), the initiating assertion gives rise to the rQUD structure in (30), which is added to the Table, and simultaneously resolves aQb, leaving bQa on the Table. B's response then contributes a reversing move relative to bQa, thus resolving the rQUD but violating the Norm of Reciprocity. Concretely, context update for (29) proceeds as follows:

- (31) **State K_1 :** initial context state
 K_0 such that:
 a. $cg = s_1$
 b. $ps = s_1$
- (32) **State K_2 :** a asserted 'I would be reluctant to criticize you' relative to K_1 :
 $A(I \text{ would be reluctant to criticize you}[D], a, K_i) = K_0$ such that:
 a. $DC_{a,0} = DC_{a,i} \cup \{p\}$
 b. $T_0 = push(<a \text{ would be reluctant to criticize } b[D]; \{p_1\}>, <\{aQb\}, \{bQa\}>, <\{q\}, \{\neg q\}>, T_i)$
 c. $ps_0 = \{ps_i \cup \{p\} \cup \{q\}, ps_i \cup \{p\} \cup \{\neg q\}, ps_i \cup \{p\}\}$

Following the initial context state in (31), the initiating assertion is added to the table via the assertive speech act operator, **A**, as in (32). In addition to the assertion itself, the rQUD struc-

ture, including the reciprocal superquestion *Would A and B be reluctant to criticize each other?* and subquestion bQa *Would B be reluctant to criticize A?* are added to the table via the function *push*, which adds content to the push-down stack. Subquestion aQb is not pushed onto the Table; note that only the propositions q and $\neg q$, which denote possible answers to bQa, are added in (32a), as A's utterance automatically resolves aQb by asserting p . In (32c), the projected set reflects the fact that bQa has been raised, as q and $\neg q$ are propositions that may be added to the common ground along with p , according to the content of B's response.

In the case of a confirming response, participant B contributes a move bearing the relative polarity feature [*agree*], resulting in the following:

(33) **Compliance with the NoR:**

State K_{3a} : b asserted 'I would <be reluctant to criticize you>, too' relative to K_2 :

Input context condition: $top(T_i) = \langle \{q, \neg q\} \rangle$

PQ-C(*I would <be reluctant to criticize you>*[D], b, K_i) = K_o such that:

- $DC_{b,o} = DC_{b,i} \cup \{q\}$
- $T_o = push(\langle b \text{ would be reluctant to criticize } a \rangle [D]; \{q\}, T_i)$
- $cg_o = cg_i \cup \{p\} \cup \{q\}$

In (33), the input context condition is first checked to verify that participant B's confirming move targets the item at the top of the stack, namely subquestion bQa. B's assertion is then pushed onto the table via the polar question-confirming operator, **PQ-C**, which results in the overall resolution of the rQUD structure. The resulting cg contains both p and q .

Consider the alternative reversing response in (34), which models the discourse in (29). This proceeds similarly to (33), save the speech act operator and resulting cg :

(34) **Violation of the NoR:**

State K_{3b} : b asserted 'I wouldn't <be reluctant to criticize you>, either' relative to K_2 :

Input context condition: $top(T_i) = \langle \{q, \neg q\} \rangle$

PQ-R(*I wouldn't <be reluctant to criticize you>*[D], b, K_i) = K_o such that:

- $DC_{b,o} = DC_{b,i} \cup \{\neg q\}$
- $T_o = push(\langle b \text{ would be reluctant to criticize } a \rangle [D]; \{\neg q\}, T_i)$
- $cg_o = cg_i \cup \{p\} \cup \{\neg q\}$

Following verification of the input context condition, a polar question-reversing speech act operator, **PQ-R**, adds the assertion to the table and resolves bQa in violation of the NoR, and p and $\neg q$ are added to the cg . In the event of a reversing move, the subsequent discourse is subject to the consequences of violating the NoR and thus failing to reach a reciprocal commitment¹¹.

For the sake of space, the proper name derivation is not provided here, but these examples proceed in more or less an identical manner. Though the table was originally intended to model the grammar of cross-turn conversation, more recently, it has been applied to within-speaker cases as well (e.g. rhetorical questions, pedagogical contexts, and other cases where the QUD is

¹¹Note that the current analysis does not capture exactly what these consequences are (but see *Succession* S3E2, 21:22-22:04 for an example of initial violation followed by eventual compliance), in part because the table is a model of conversation that focuses on information exchange, whereas reciprocal exchanges do not occur for information-exchange purposes (see §2.1-2.2). Future work should aim to develop a pragmatic system that considers the social function of reciprocity and is capable of incorporating non-linguistic aspects of communication.

both raised and resolved by the speaker) (Farkas, to appear). The difference between reciprocal situations and normal instances of an implicit QUD structure guiding a speaker's monologue, for example, is that in exchanges describing reciprocal situations, the socially-evoked QUD structure is salient for the addressee as well. In the event that the speaker does not resolve the rQUD, it is quite natural for the addressee to raise subquestion bQa overtly, as in (35), as a means of forcing resolution of the question. Here, too, the question may involve AR-VPE:

- (35) **A:** Ossie wanted to dance with Ayla.
 B: Well, did SHE <want to dance with him>?

3.4. Implicit questions

I now return to the idea that implicit content may be added to the table and directly responded to in a manner similar to responding to an overt question. Despite this assumption, responding to an implicit question is distinct in several ways. The implicit rQUDs of the current proposal do not permit responses containing polarity particles (36a), whereas overt questions do (36b). Note also that (36b) provides additional evidence in favor of the salience of the implicit question, as participant B's initial silence constitutes a violation of the NoR. In this case, participant A may overtly raise subquestion bQa of the rQUD as a means of demanding a response to the question, somewhat akin to the 'cornering effect' identified by Biezma (2009).

- (36) a. **A:** I would be reluctant to criticize you. *(Would you?)
 B: No, I wouldn't.
 b. **A:** I would be reluctant to criticize you.
 B: [silence]
 A: Well, would YOU?
 B: No, I wouldn't.

In addition, a response containing null complement anaphora (NCA) is only permitted in the event that it better matches the form of the antecedent clause, as in (37b).

- (37) a. **A:** I don't want to be divorced from you.
 B: I might. / *I'm not sure.
 b. **A:** I'm pretty sure I don't want to be divorced from you.
 B: ?I might. / I'm not sure.

In (37a), note that the NCA response (*I'm not sure*) is degraded relative to the VPE response (*I might*). In (37b), however, the opposite pattern holds. This is due to the pressure from the NoR to contribute a response that matches as closely as possible. In particular, Gouldner (1960) proposes a more specific version of the NoR termed *homeomorphic reciprocity*, where exchanges are identical in form. The contrast between (37a) and (37b) provides suggestive evidence in favor of a pragmatic pressure for identity between initiating assertion and response in cross-speaker reciprocal situations (see §4 for additional arguments in favor of syntactic parallelism in within-speaker ARs).

Despite these apparent differences, the issue of responses to implicit questions is not one that is specific to the table model or the account I propose here, but rather something that QUD theory

The pragmatics of argument reversing verb phrase ellipsis

(e.g. **A:** *Matthew owes Clarissa.* **B:** *??Clarissa does*). In contrast, sloppy ellipsis has no such requirement on presupposition triggers:

- (39) Ossie_i loves his_i cat, and Ayla_k does <love her_k cat>.

Additionally, sentence-internal AR-VPE shows a preference for syntactic parallelism (40). This, too, may be due to the fact that parallelism provides a stronger cue to the discourse structure, and consequently results in less effortful accommodation of the QUD. Once again, sloppy ellipsis is not subject to the same preference (41).

- (40) ?Ossie wanted to dance with Ayla, and so did Ayla <want to dance with Ossie>.

- (41) Ossie loves his cat, and so does Ayla <love her cat>.

Finally, AR-VPE shows a preference for recent antecedents. In the interlocutor cases, the need for an immediate response to the QUD (in terms of time or conversational moves) supports the connection to confirming and reversing moves, which target the top of the stack (recall the input context condition in (33)-(34)). For proper name ARs, recency depends on continued salience of the rQUD over intervening material. When this condition does not hold, AR-VPE is not possible at a distance:

- (42) Ossie wanted to dance with Ayla, Finny wanted to dance with Mara, and Ayla did <want to dance with {Mara, *Ossie}>, too.

- (43) Ossie wanted to go to the dance with Ayla, but he needed to study for a huge test.
a. *They're in the same class*, so it turns out that she did, too. ✗ AR-VPE
b. *He never thought she'd notice him*, but it turns out that she did, too. ✓ AR-VPE

In (42), an intervening pair of participants blocks the AR reading. Similarly, intervening material between antecedent and ellipsis with contextual information that reactivates the rQUD (43b) yields the AR reading, whereas lack of such biasing context results in strict VPE (43a).

Taken together, the contextual restrictions on AR-VPE as well as the requirements on presupposition triggers or contrastive focus, syntactic parallelism, and recent antecedents suggest significant pragmatic, structural, and distributional differences relative to canonical VPE. This indicates that the interpretation of AR-VPE depends on the confluence of multiple cues to the discourse structure. While the current data is not sufficient to delineate between the types of theories I outlined at the outset of this section, I tentatively suggest that these facts point towards a pragmatic rescuing mechanism, which allows for a discourse structure to influence the content of an ellipsis site given sufficient pragmatic support. This option allows for the maintenance of standard identity conditions on canonical ellipsis, as well as a common procedure for resolving mismatches. That being said, the possibility that AR-VPE involves ordinary anaphora to the discourse structure without need for identity remains. Future work should take experimental evidence into account in order to adjudicate between these options.

5. Conclusion

The present paper argues for a pragmatic analysis of argument mismatches in verb phrase ellipsis. The general claim is that in restricted pragmatic contexts, namely those involving reciprocity or actuality, ellipsis may involve anaphora to a salient Question Under Discussion structure. Under these circumstances, mismatches of argument structure are permitted. The issue of whether the resulting constructions are grammatical or merely interpretable via a rescuing process that allows for accommodation of the QUD is an open question. However, suggestive evidence concerning the distributional properties of AR-VPE points toward the latter option. There remain a number of additional open issues, including the cross-linguistic facts on AR-VPE and whether similar mismatches are possible with other types of ellipsis.

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