English tag questions eliciting knowledge or action

A comparison of the speech function and exchange structure models

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1.   Introduction

In this article we compare the two main models that have been developed within Systemic-Functional Linguistics to analyse the functions of utterances in dialogue: the speech function model proposed in Halliday (1985) and Halliday & Matthiessen (2004) and the exchange structure analysis elaborated by Berry (1981a, b, c, 2016).[1] This comparison focuses on English variable tag questions (henceforth TQs), which consist of an anchor, potentially of any mood type, modified by an interrogative tag. Our case study is grounded in the investigation of three corpora: the London Lund Corpus (LLC), the Bergen Corpus of London Teenage Language (COLT) and the International Corpus of English GB (ICE-GB). More specifically, we focus on TQs that demand information from the hearer, e.g. (1), or the execution of an action, e.g. (2).[2]

(1)   D: ^h\/ello# you +^work for !B\arclays d/o you#+
      B: (laughs .) +^y/es#   (LLC: 4.4)

(2)   A: and ^then _phone Br\ian w/ill you# – *((a^bout it))*
      B: *^I will* !sp\eak to Brian#   (LLC: 5.12)

On the one hand, these functions tend to be recognizable in conversation because they project a specific expected response, viz. the information or action they are meant to elicit. On the other hand, the identification of these functions is not straightforward in a number of cases because of the hybrid form of TQs. This is why TQs demanding information or action are a good test case for models analysing the interactional functions of utterances in dialogue.

The article is structured as follows. In Section 2, we describe our dataset. In Section 3, we use the speech function model (Section 3.1), its conversational features (Sections 3.2 to 3.4) and form-function correlations (Sections 3.5 to 3.8) to identify TQs used as questions and commands. In Section 4, we consider the same subset of the TQ data in terms of Berry's exchange structure analysis (Section 4.1), applying its alternative conversational features to them (Sections 4.2–4.3). In Section 5 we compare the two approaches, answering questions such as the following: Which aspects of spontaneous dialogue are captured better by speech function analysis and which by exchange analysis? Can the two be combined? What issues and elements need to be further developed?

2.   Data and data analysis

In this study we use the dataset of 1452 variable TQs compiled by Kimps (2018) from the LLC, the prosodically transcribed part of COLT, and the spoken component of ICE-GB.[3] The examples from the LLC and COLT include prosodic annotation, which differs in degree of detail (reproduced in full), but which is based on the same understanding of English tone units (O'Grady 2010). Tone units are identified primarily by tonal contours, whose most prominent change in pitch, either falling (\) or rising (/) or a combination of the two, is situated on one syllable, the nucleus, and continues until the end of the tone unit. The tone unit boundaries are marked by #.[4] In addition, Kimps (2018) analysed the sound files of the TQs retrieved from the ICE-GB in Praat (Boersma & Weenink 2015) with the ToBI annotation system (Beckman & Ayers Elam 1993), translating the ToBI tails into

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3. The distribution of TQs over the three corpora is as follows: 530 from ICE-GB, 289 from COLT and 633 from LLC (for more information, see Kimps 2018).

4. The additional prosodic marking in the LLC includes: ^ silent onset; . brief pause; - unit pause of one stress unit; ' normal stress; " heavy stress; : higher pitch level than preceding syllable; ! booster higher than preceding pitch prominent syllable; [] partial words; {} subordinate tone unit; * simultaneous talk; (()) incomprehensible words. COLT's additional marking includes: … (3) long pause of 3 seconds; [] simultaneous talk.

tonal contours following the correspondence table in O'Grady (2013:140). In the ICE-GB examples only tone boundaries and nuclei are therefore indicated.

In this article, we focus on the subset of TQs used to elicit knowledge or action, compiled from Kimps' dataset without further differentiation between the three corpora.[5] To establish whether there are significant differences in the distribution of features over these subtypes in comparison with TQs at large in the whole dataset, we refer to the (adjusted) Pearson residuals (PR),[6] which when equal to or higher than 2 indicate a significant difference in the distribution. As the emphasis is ultimately on the conceptual analysis, examples were chosen for their illustrative value and not to provide an equal representation from the three corpora.

3.   The speech function model: TQs demanding information or goods-and-services

3.1   The speech function model

The speech function model originates in Halliday's (1964[1976], 1970) functional interpretation of the English moods (declarative, interrogative and imperative) as coded by word order and prosody. The moods allow the speaker to enact speech roles, for instance that of declarer, and to assign at the same time roles to the hearer such as the role of receiver of information, which, in turn, predicts responses such as acknowledgement (Halliday 1985:68). Martin ([1981]2010:40) borrowed the term 'adjacency pair' from Conversation Analysis (Schegloff & Sacks 1973) to refer to such pairs of speech functions and their predicted responses. In Halliday's work, speech functions are located within the interpersonal metafunction, i.e. the area of meaning concerned with the subjective stance and interactive force given by the speaker to the propositional material. Halliday & Matthiessen (2004:chapter 4) argue that the speech functions of the English clause are coded by mood, prosody, polarity and modality. Every independent clause-in-context involves interaction between speaker and hearer, the nature of which is determined by two parameters: (i) the speech role of either giving or demanding, (ii) "the nature of the commodity being exchanged" (Halliday 1985:68), which can be goods-and-services or information. These two together define "the four primary speech functions of OFFER, COMMAND, STATEMENT and QUESTION" (Halliday

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5. The distribution of speech function types and features of TQs is discussed in detail in Kimps (2018:191–213).

6. Residuals measure the deviation of an observed value from an expected value. For more information about the use of (adjusted) Pearson's Residuals, see Levshina (2015:154, 218–219).

1985: 68). The last three speech functions have, as their typical realizations, moods favouring specific tones, such as a declarative with a falling tone for a statement, an imperative with a fall or low rise for a command, and a polar interrogative with a rise for a question (Halliday & Matthiessen 2004: 140–144). There is no typical mood for offers in English (see also Butler this volume). The four primary speech functions are matched by a set of expected responses, but the co-speaker has the discretion not to provide the expected response, as set out in Table 1. The relations between speech acts are analysed in terms of an initiating and responding pair part.

Table 1. Speech functions and responses (Halliday & Matthiessen 2004: 108)

		Initiation	Response expected	Discretionary
Give	Goods-&-services	Offer	Acceptance	Rejection
		Shall I give you this teapot?	*Yes, please, do!*	*No, thanks.*
Demand		Command	Undertaking	Refusal
		Give me that teapot!	*Here you are.*	*I won't.*
Give	Information	Statement	Acknowledgement	Contradiction
		He's giving her the teapot.	*Is he?*	*No, he isn't.*
Demand		Question	Answer	Disclaimer
		Did he give her the teapot?	*Yes, he did.*	*I don't know.*

Halliday & Matthiessen (2004: 143–150) hold that the primary speech functions and their responses are also associated with typical choices in the systems of polarity and modality. A command, typically realized by an imperative, can also be realized by a declarative with modals expressing degrees of obligation.[7] Positive (*do!*) and negative polarity (*don't!*) form the extremes of a scale whose intermediate values are expressed by modals: *you must do, you should do, you may do*. Similarly, a speaker can use the declarative mood to assert a piece of information, deny it, or to attach degrees of likelihood to it (*maybe, probably, certainly*).

In the following sections we discuss how we applied the speech function properties (Sections 3.2 to 3.4) and the form-function correlations (Sections 3.5 to 3.8) to our TQ data to identify question and command uses. We discuss the relevant features in the following order: demanding of information or goods-and-services (Section 3.2), initiating move (Section 3.3), types of response (Section 3.4), mood type of anchor (Section 3.5), modality (Section 3.6), polarity (Section 3.7), and prosody (Section 3.8).

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7. These are known as deontic modals in the mainstream, but are referred to as modulation by Halliday & Matthiessen (2004).

3.2   Demanding of information or goods-and-services

Regarding the exchange of information, Kimps *et al.* (2014) and Kimps (2018) made a distinction between TQs that really demand information, as in (3), and ones that give information but expect a response, as in (4). In (3) speaker B wants to find out if a television programme is on Thursday night, whereas in (4) speaker A gives his opinion, which he hopes to see confirmed.[8]

(3) B: "^Thursday n\ight - it /is {^/isn't it#
     A: ^[\m]#   (LLC: 1.11a)

(4) A: ^or . [@:m] - ((it'd ^mean one would have to ext=end#) and ^say it's very worthwh\ile# (^w/ouldn't it#))
     B: [@:] ^very ^very "!much worth the :tr\ouble#   (LLC: 1.1)

While this distinction is clear in examples like (3) and (4), it was difficult to make in many cases without bringing in Berry's (1981a, 2016) notions of primary and secondary knower. Why this is the case will be explained in Section 4.2.

Only truly information-seeking TQs like (3) were analysed as questions. For examples like (4), it was argued that they resist a principled distinction between statements and questions. These TQs are not ambiguous between a statement or question because the hearer does not have to choose between two readings (Halliday 1985: 245). Instead, elements of both readings are present, giving information and soliciting a response. Therefore, they were analysed as statement-question blends.

With the exchange of goods-and-services, the problem of distinguishing demanding from giving cropped up in a different form. Examples like (2) above, *and ^then _phone Br\ian w/ill you#* clearly involve demanding goods-and-services, and are commands. However, an example like (5) is less clear. In Kimps *et al.* (2014) such examples were classified as offers because the goods-and-services talked about benefit the hearer, who can accept or reject them by responses typical of offers (see Table 1) such as *Thanks, No thanks.*

(5) ^r\/ight# ^sit down h\/ere would you#   (LLC: 3.5a)

However, this analysis may be felt to clash with the grammatical semantics of the imperative anchor. In Section 4.3, we will reconsider such examples from the perspective of exchange structure.

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8. As the analysis was based on audio files, the speakers involved in the quoted excerpts could be identified as male or female and are referred to by gendered pronouns.

3.3 Initiating move

In the speech function model, questions and commands are always initiating speech acts. Kimps *et al.* (2014) followed this idea, interpreting adjacency, like Drew (2012), not in structural terms as parts of one reified pair, but as a principle, the "'power' to mobilize a next" (Drew 2012:65). This principle remains present in contexts like (6) where A's question TQ addressed to dad is not answered by him.

(6) A: <u>You w\ouldn't normally# w/ould you#</u> Dad
     D: You don't even swat flies now do you
     B: No daddy's a Jain   (ICE-GB:S1A-032-074)

Kimps *et al.* (2014:107) posited that adjacency pairs can overlap. For example in (7), B first asks *what happens*, and then answers his own question. This was analysed as a first pair, consisting of question and answer. B's TQ is then followed by A's disagreement, which we analysed as a second adjacency pair, consisting of statement and disagreement. We will revisit this example from an exchange structure perspective in Section 4.3.

(7) B: ^what h\appens# ^<u>this 'comes right \/off does it#</u>
     A: no it screws in tight and the [@:m]   (LLC: 1.7)

Command TQs project non-verbal action, which may, as in (2), but need not, be accompanied by a verbal response.

   On the basis of these two speech function features, demanding exchange role and initiating move, of the 1452 TQs in the dataset, 269 were identified as questions and 16 as commands. These proportions show that question and command are not the default functions of TQs.

3.4 Type of responses

Data-based studies of TQs (e.g. Bald 1979:277) have noted that presence and types of responses are indicative of the interactional meanings of TQs. Question TQs expect answers, and in our dataset, they do receive answers in 87% of cases. The Pearson Residual of 10.9 shows that this is a highly significant distribution. With command and offer TQs, the verbal response is optional. The absence of a verbal response was indeed found to be significantly more frequent with TQs exchanging goods-and-services in our data (40%) than with TQs overall (27%), as shown by a Pearson Residual score of 2.1.

   Further reactions to responses are also indicative of the interactional meanings of TQs. It is, for instance, intuitively clear that in an example like (8), B's ^*ah*# relates to both B's earlier question and A's confirming response.

(8)   B: ^you don't !g\/et yours 'do you# +((1 to 2 sylls))+
      A: +^not till Fr\iday# ^n\o#+
      B: ^\ah#   (LLC: 7.3i)

In a strict adjacency pair approach such relations cannot be captured, whereas exchange structures do seek to account for them (see Section 4.3).

3.5   Mood type of anchor

Descriptions of TQs such as Quirk *et al.* (1985) agree with the speech function model in correlating the discourse functions of TQs primarily with the mood of the anchor. TQs with imperative anchors are restricted to TQs negotiating goods-and-services, as in (2) above. TQs with declarative anchors are strongly associated with TQs negotiating – either giving or demanding – information (but see Section 3.6).

3.6   Modality in anchor and tag

TQs with declarative anchors can be used as commands if they contain dynamic modal auxiliaries (volition or ability) or deontic modals (Axelsson 2011: 61–66).

(9)   you will be c\areful with that#, w\on't you#   (COLT: B133301.PRO)[9]

However, the presence of a modal does not allow a crisp distinction between exchanging information and negotiating goods-and-services. The TQ in (10) for instance can be interpreted as demanding information ('you intend to enter?'), or action ('enter the contest!').

(10)   you're gonna enter \aren't you Yasmin#   (COLT: B136410.PRO)

3.7   Constant versus reversed polarity

We found that in our dataset, TQs in general have reversed polarity as default (87.1%,) and constant polarity as marked option (12.9%). Within the question TQs, however, 48% have reversed polarity and 52% constant polarity. The constant polarity pattern thus has a significantly stronger association with question TQs than with TQs at large (Pearson Residual = 21).

   Kimps (2007) proposes that in such constant polarity TQs, the speaker gives a recent interpretation of new contextual information in the anchor, regarding

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9.   PRO is a file extension name used in COLT.

which stance is conveyed in the tag, either challenging, as in (11), or verification-seeking, as in (12).

(11) D: you've ^{passed thr\ough} {your po:l\itical}:Lady* H\amilton 'phase h/ave
          you# -

      B: ^n/o# ^n/o# - I ^don't in'tend to do 'anything of th\at sort# - ^w/ell# - - I
          +^don't+ 'think I'll !do   (LLC: 1.12)

(12) B: and ^Bronco 'come 'in at . 'forty:thr\ee#

      A: ^[\mhm]# - - -

      B: and you ^checked with 'Mark 'Timson that he wasn't /\interested# *((^d/
          id you#))*

      A: *^y/es#* ((^he)) . un!f\ortunately was 'too !b/usy#   (LLC: 3.7)

Command TQs also favour constant polarity, accounting for 62.5% of cases, as in (2) *and ^then _phone Br\ian w/ill you#*. Hence, TQs demanding information and goods-and-services are both more strongly associated with positive-positive polarity than TQs in general.

3.8 Prosody

Reference works such as Quirk *et al.* (1985: 811) have suggested that TQs used as real questions tend to have a rising tone on the tag. Kimps (2018: 99–103) found this to be true as a default, i.e. in 73% of cases, as opposed to only 22% for all TQs in the dataset, which is highly significant (Pearson Residual = 22). In this default Kimps (2018) included the examples of COLT and LLC carrying what in the British school of intonation is called a compound tone, as in (11) above, where the fall on *through* in the anchor and the rise on *have* in the tag are included within one tone unit. In fact, 41% of the question TQs in COLT and LLC are transcribed as having compound tones (Kimps *et al.* 2014: 76). However, Kimps (2018: 72–85) follows O'Grady (2010, 2013) in not recognizing compound tones, and viewing them as two tone units between which there is neither a pause nor an intervening prominence. This entails that in examples like (11) the tag is analysed as being uttered on a rising tone in a distinct tone unit. Moreover, Kimps (2018: 102–103) argues that postnuclear TQs like in (7), ^*this 'comes right \/off does it#*, where the rising tone on the anchor continues over the tag in the tail, also embody a rise on the tag, adding a further 13% to the default. It can be noted that TQs with a so-called 'compound' tone and postnuclear TQs have in common that there is no prosodic break between the anchor and the tag. This phenomenon is found in about 42% of cases.

The same prosodic features are typical of the command TQs, 10, i.e. 62.5%, have a rise associated with their tag, and 8, i.e. 50%, have no break between anchor

and tag due to a compound tone or postnuclear tag. We suggest that the rising tone on the tag of TQs demanding information or goods-and-services conveys their open and hearer-centred nature (O'Grady 2016:19). The discursive semantic value of the absence of a prosodic break between the anchor and the tag remains to be clarified.

3.9   Interim conclusion

In this section we have first applied the conversational features of the speech function analysis to identify TQs asking information or goods-and-services. We have noted that distinguishing demanding from giving as interactional role is not always straightforward. The focus on pairs prevents modelling the fact that "a given interact can give rise to more than one other" (Martin 1992:147), but the notion of overlapping adjacency pairs can capture cases where an utterance both completes one pair and initiates a second pair. Three formal features emerged as typical of question and command TQs in contrast with TQs at large: (1) the tag carrying a rising tone, (2) no prosodic break between the anchor and the tag, (3) constant (positive–positive) polarity. Apart from the first, these have not received much attention in the literature yet. We suspect that all relate in some way to the eliciting and hearer-oriented meaning of these TQs but why this is so needs further study. Now that we have shown what the speech function analysis brings out about TQs demanding information or goods-and-services, we will consider in the next section how Berry's exchange structure analysis identifies TQs negotiating knowledge or action.

4.   Exchange structure: TQs eliciting knowledge or action

Exchange structure analysis was pioneered by the Birmingham School of Discourse Analysis (e.g. Burton 1980; Coulthard & Brazil 1979; Sinclair & Coulthard 1975), from which Berry took the basic structural units of exchange, move and act. But whereas the model of the Birmingham School is monolayered, Berry (1980, 1981a, b, c, 2016) has developed a model of exchange structure that has a textual, experiential, and interpersonal layer, corresponding to Halliday's ([1964]1976) metafunctions.[10] In Section 4.1, we first discuss Berry's model for smoothly unfolding

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10.   Elements of Berry's framework were incorporated in the analyses developed by, amongst others, Eggins & Slade (1997), Martin (1992), O'Donnell (1990), Rose (2014), Stenström (1984), Tsui (1994), and Ventola (1987). Berry (2016) formulates her current position on exchange structure, which we discuss in the following sections.

exchanges, which follows "the polite consensus-collaborative model" (Burton 1980:140), where at each move the co-participant follows the expected structure, choosing supporting moves. We then apply it to the TQ data, assessing the criteria it provides for identifying TQs eliciting knowledge and action (Sections 4.2 and 4.3). In Section 4.4, we turn to Berry's analysis of non-supporting moves, queries and challenges, which we also apply to the TQ data.

4.1   The smoothly unfolding exchange

4.1.1   *Berry's model*

Berry conceptualizes the moves in an exchange as simultaneously realizing meanings from Halliday's three metafunctions. In a smoothly unfolding exchange, the functions on the textual, experiential and interpersonal levels play out as follows:

At the *textual* level, the functions of the moves are defined by their actual sequence in the exchange, with Initiation (I), Response (R) and Finis (F) as the main elements of the 'culminative' structure, as represented in (13).

(13)   I R F

What Berry adds most conspicuously in comparison with the Birmingham school is a criterion to delimit the exchange at the *experiential* level, where knowledge exchanges are distinguished from action exchanges She proposes that "an exchange lasts as long as the same propositional content or the same action is being negotiated" (Berry 2016: 44).

Knowledge exchanges are geared towards the transmitting of a completed proposition, i.e. propositional completion (pc), which is the one obligatory move (Berry 1981a:139). The propositional completion may be preceded by a propositional base (pb), i.e. the proposition that the exchange is about, but with something missing (an experiential constituent or polarity). Following the propositional completion there may be a move accepting that proposition, i.e. propositional support (ps). This propositional progression tends to go together with increasing ellipsis of the proposition (Berry 1981c), as illustrated in (14), in which we also include the textual functions I, R and F. As the latter derive directly from the actual sequence of the moves, we will not include them for the following examples.

(14)   B: ^you don't !g\/et yours 'do you# +((1 to 2 sylls))+   I   pb
      A: +^not till Fr\iday# ^n\o#+   R   pc
      B: ^\ah#   F   ps

                                                                                      (LLC: 7.3i)

Action exchanges are conceived of as being parallel with knowledge exchanges at the experiential level. Action exchanges are geared towards the realization of a completed action (ac), which is non-verbal, but may be accompanied by verbal assent. To capture this, Berry (1981b: 25) invokes the notion of acts as constituents of a move: the non-verbal realization is the obligatory act, while the verbal assent is an optional act. Action completion may be followed by a move supporting this action (as) and may be preceded by two moves. Berry (1981b) tentatively gives these the same labels as their counterparts in knowledge exchanges, propositional base and propositional completion. She notes, however, that "some way would have to be found of relating action content to propositional content" (Berry 1981b: 26), as the action of opening a door in reaction to the completed proposition *Could you close the window please* is pragmatically ill-formed. This yields four possible experiential moves, pb pc ac as, typically involving increasing ellipticity, which we illustrate with an exchange initiated by the offer of action (15).

(15)   A: I've ^f\ound the addr/ess book# and I'll ^post !\off 'Rita's 'parcel sh/all   pb
      I#.
    B: [@:] ^y\es# c/ould you#   pc
    A: ^\OK#.   ac
    B: [@:m]   as
                                              (LLC: 9.2e)

At the *interpersonal* level, the functions are motivated by "what is being negotiated", i.e. knowledge or action, and "the roles that the interactants adopt in relation to this" (Berry 2016: 41). For the interactants in *knowledge* exchanges, Berry (1981a: 126) proposed the roles of primary knower, i.e. the interactant "who already knows the information", and of secondary knower, the interactant who does not know the information. Muntigl (2009: 260–261) argued for an update of these definitions with reference to recent thinking in Conversation Analysis according to which the asymmetry in knowledge between co-participants is not just a matter of speakers simply having more knowledge, but of speakers claiming greater epistemic authority, i.e. better access to knowledge and more rights to pronounce assessments (Heritage & Raymond 2005). In Muntigl's (2009: 260–261) revised definitions the primary knower is a "speaker who claims primary epistemic rights or is positioned by another speaker as having these rights" and the secondary knower is a "speaker who claims secondary epistemic rights or is positioned by another speaker as having these rights" (Muntigl 2009: 260–261). These revised definitions were endorsed by Berry (2016: 53).

The central move on the interpersonal level, k1, consists of the primary knower providing the completed proposition. If the primary knower initiates the exchange, s/he may produce the completed proposition straightaway, or s/he

may delay doing so, which then defines the move 'dk1', mapped to a proposition base. Berry (1981a, 2016: 44) associates 'dk1' with situations in which the primary knower addresses the secondary knower with an 'examination question' (Athanasiadou 1991: 109) to test their knowledge, e.g. *what s\ector# \is it#* in (16). In response to such a move, the secondary knower will produce a proposition, but it will lack the stamp of authority, i.e. it will be a k2 move mapped to a proposition base (k2/pb), e.g. B's answer *t\ertiary#*. The primary knower then has to provide the completed proposition on which s/he is the authority, i.e. k1/pc, A's *t\ertiary#*.

(16)   A: s\o#, what do you do when you go to a hot\el# you st\op there# d\   dk1 pb
          on't you# s\o#, what s\ector# \is it#
      B: t\ertiary#   k2   pb
      A: t\ertiary#   k1   pc
                                               (COLT: B135907.PRO)

If the secondary knower initiates the exchange, as in (17), this will be a question about information requested by the secondary knower, that is, it will be k2/pb. The answer by the primary knower provides the completed proposition, k1/pc. There may be a follow-up move by the secondary knower mapped on to proposition support (k2f/ps), B's *\ah#* in (17). Ventola (1987: 100) observed that some knowledge exchanges may have a further follow-up by the primary knower, k1f.

(17)   B: ^you don't !g\/et yours 'do you# +((1 to 2 sylls))+ k2 pb
      A: +^not till Fr\iday# ^n\o#+   k1   pc
      B: ^\ah#   k2f ps
                                                    (LLC: 7.3i)

The maximal sequence of interpersonal moves in a knowledge exchange can thus be represented as in (i).

(i)   dk1 k2 k1 k2f k1f

For the roles adopted by the interactants in *action* exchanges, we only have Berry's (1981b: 24) early definitions: the primary actor is the one "who is actually going to carry out the action" and the secondary actor is the one "who is getting the other person to do it". The resulting maximal sequence of interpersonal moves in an action exchange closely parallels that in a knowledge exchange.

The central move on the interpersonal level, a1, is the primary actor non-verbally realizing the completed action. A verbalized action exchange can consist of just the primary actor carrying out an action and adding a verbal act (a1). The primary actor may also delay carrying out the action to "check that the action is acceptable to the secondary actor" (Berry 1981b: 24), which defines the move da1. This move is an offer, which Berry seems to define more broadly than Halliday &

Matthiessen (2004:108), as a speaker can also announce an action that does not offer goods or services to the hearer, e.g. A: *I'll be off now* – B: *OK*. The da1 move predicts a move in which the secondary actor accepts or rejects the action, a2, which Berry (1981a:30) calls a directive. If accepted, it will be followed by the primary actor (committing to) executing the action, a1. The a1 move may trigger a follow-up move by the secondary actor, a2f. This type of exchange is illustrated in (18).

(18)   A: I've ^f\ound the addr/ess book# and I'll ^post !\off 'Rita's 'parcel   da1 pb
       sh/all I#.
       B: [@:] ^y\es# c/ould you#   a2   pc
       A: ^\OK#.   a1   ac
       B: [@:m]   a2f as
                                                                              (LLC: 9.2e)

If the secondary actor initiates the exchange, this will be a2, a directive. The response expected from the primary actor is the realization of the action, a1, for which there may be a follow-up by the secondary actor, a2f. This type of action exchange is illustrated in (19).

(19)   A: go a bit sl\ower w/ill you#   a2   pb
       B: y\es#.   a1   ac
       A: ok/ay#   a2f as
                                                                    (COLT: B141101.PRO)

The maximal sequence of interpersonal moves in action exchanges, represented in (ii), is parallel with the moves in a knowledge exchange (i).

(ii)   da1 a2 a1 a2f

4.1.2   *Some suggested modifications and extensions*

In this section, we propose to extend Berry's analysis in a number of ways. We first propose two concrete *adaptations* of the exchange structure analysis. We then sketch a *perspective* to relate the interpersonal functions more precisely to the grammatical form of the utterances realizing them. (A fully-fledged description of all the function-form correlations that come into play here is beyond the scope of this article.)

The first adaptation pertains to the interpersonal dk1 move in knowledge exchanges, which, we point out, is not restricted to 'examination questions' asked by a primary knower for didactic purposes, as in (16) above. The primary knower may also delay giving their information to first check if the secondary knower wants to receive it. This is illustrated with a TQ example in (20). The moves from both the interpersonal and the experiential layer apply to this example as predicted by Berry.

(20) A: I'll ^give you my 'name and ad:dr\ess sh/all I#   dk1 pb
     C: ^yes pl/ease#   k2   pb
     A: the ^name is !\/I'ain# ^I A I /N#   k1   pc
     C: ^[/m]#   k2f ps

                                                   (LLC: 9.2e)

This application of the dk1 move is wholly analogous with that of the primary actor checking the acceptability of the proposed action with the secondary actor in the da1 move, as illustrated in (18) above.

The second modification is concerned with the experiential functions pb and pc in action exchanges, which Berry (1981b: 26) herself indicated that she was not fully happy with. Our proposal is to define the experiential functions throughout the whole exchange as negotiating the *action* described in the initial move, rather than positing negotiation of a proposition for the first two moves (as shown in 18 above). On our analysis, represented in (21), the primary actor first selects the action ('I – post off – Rita's parcel') and checks its acceptability with the secondary actor, that is, an action base (ab) is proposed. The secondary actor then indicates his acceptance, confirming the action base (ab) in the exchange. The completed action (ac) is verbalized by the primary actor in the next move, which is reacted to by an action support (as) by the secondary actor.

(21) A: I've ^f\ound the addr/ess book# and I'll ^post !\off 'Rita's 'parcel   da1 ab
       sh/all I#.
     B: [@:] ^y\es# c/ould you#   a2   ab
     A: ^\OK#.   a1   ac
     B: [@:m]   a2f as
                                                 (LLC: 7.2b)

Note that the two proposed modifications allow one to bring out the full parallelism between knowledge exchanges like (20) and action exchanges like (21). Importantly, viewing 'proposition' and 'action' as the basic representational components of the interpersonal functions in knowledge and action exchanges opens a perspective for relating the interpersonal functions more precisely to the grammatical form of the utterances realizing them.

Berry's (1981a, c) notion of *proposition* appears to be very similar to Halliday's (1970: 337) view of a proposition as consisting of a 'thesis' about a situation located in time. To this experiential component speakers add an interpersonal *modal value*, expressed by polar values and/or epistemic modals. Positive and negative polarity form the extremes of the epistemic modal scale (Halliday 1985: 75), "defined as a scale of likelihood … in relation to propositions", with epistemic modals forming "the intermediate possibilities between the 'yes' and 'no' poles of asserting and denying: 'it is so' / 'it isn't so'" (Davies 2001: 218). Declaratives

construe the speaker's epistemic stance towards the proposition (through polarity and/or epistemic modal expressions), whereas interrogatives ask the hearer to assume an epistemic modal position towards the proposition (Verstraete 2007:59). Hence, we propose that the grammatical form of the interpersonal functions in knowledge exchanges is typically analysable into modal values (expressed by polarity and/or modality) and propositions (either expressed or presupposed via ellipsis). Berry (1981c) in fact describes the different knowledge statuses involved in knowledge exchanges as realized by polar values attaching to the propositional content, which tends to be progressively elided throughout the exchange. This type of grammatical description of the interpersonal functions can naturally be extended to include epistemic modal expressions (in the strict sense) along the lines suggested by Verstraete (2007). As McGregor (this volume) puts it with reference to Tomasello (2014:103), indicatives encase propositional content in modal envelopes, and it is these that are tossed back and forth in conversation. Viewing interpersonal moves as composed of modal values attaching to propositions is wholly compatible with the idea that 'primary knower' and 'secondary knower' are modal roles (Berry 2016:53; Muntigl 2009:260–261), concerned with claiming, or being positioned as having, primary or secondary epistemic rights.

We further put forth that the interpersonal functions involved in negotiating action are likewise typically analysable into a *modal value* attaching to the description of an *action*. We understand actions as the subset of processes with a voluntary actor capable of carrying out the action (see Martin 1992:71ff). At the experiential level, such descriptions of actions are construed by the lexical verb, its participants and circumstances, e.g. 'I – post off – Rita's parcel' in (21), but they are not situated in time (Halliday 1970:339). It is this latter feature that makes them descriptions of virtual actions that have not yet been carried out and whose execution is being negotiated. To these action descriptions, polar/modal values are attached (Halliday 1970) at the interpersonal level. Positive polarity ('do!') and negative polarity ('don't!') combine with action descriptions to form positive and negative imperatives. Speaker-related deontic modals (which, just like primary tense, tie the utterance to the speech event) combine with action descriptions to form indicatives. With declaratives the speaker issues obligations or permissions, while with interrogatives s/he asks the hearer to decide whether the action should be executed (Verstraete 2007:55). Dynamic modals are quasi-modals that inquire about abilities and inclinations located in time (Halliday 1970:338). They do not code deontic meaning, but can be used in contexts where deontic meaning is inferred. In the deontic domain, the actor of the described process is also the modal actor in the sense of being the one on whom the execution of the action depends (Halliday 1970:339).

Let us, by way of exemplification, reconsider (21) in this light. In the da1 move, the interrogative with speaker-related deontic *shall* construes the hearer as the one deciding on the desirability of executing the action, i.e. it construes the hearer as the secondary 'proxy' actor of the action 'post off – Rita's parcel' associated with primary actor *I*. In the a2 move, the dynamic modal *could you* inquires if the hearer is able (and by implication willing) to carry out the action, i.e. the hearer is construed as primary actor. The past form lends polite tentativeness to this inquiry, whose coded meaning enquires about the hearer's current inclination. In the inferred discursive meaning of this move, the speaker functions as secondary actor.

We propose that the roles of primary and secondary actor can be defined as modal roles in the deontic domain, analogous with Muntigl's (2009) definitions for primary and secondary knower in terms of claiming or assigning epistemic modal rights. A secondary actor is a speaker claiming secondary deontic rights (as in a2 in (19)) or being positioned as having these rights (as in a2 in (21)). A primary actor positions him- or herself, or is positioned, as the modal actor on whom the realization of the action depends.

Having set out our general synthesis of the smoothly unfolding exchange in this section, we will approach TQs eliciting knowledge or action in the light of Berry's interactional roles (Section 4.2) and exchange structures (Section 4.3). We will assess if they provide extra recognition criteria for these TQs in comparison with the speech function analysis.

4.2 Primary versus secondary knower/actor

As argued in Kimps *et al.* (2014:69), we hold that TQs eliciting knowledge have to be identified in terms of the relative knowledge statuses of speaker and hearer. More specifically, such TQs are always posed by the secondary knower, i.e. the speaker with secondary epistemic rights and less access to the relevant knowledge territories, as in (22). Different relative knowledge statuses are crucial to the recognition of real question uses of TQs.

(22) B: <u>cos ^your 'father's now :s\eventy /is he#</u>
      A: seventy-two or *((seventy-three))*   (LLC: 1.13)

This becomes clear, if we compare an example like (22) with an at first sight similar example like (23), where the first pair position of the TQ and the rise on the tag might be viewed as being compatible with a question interpretation. However, in (23), there is little asymmetry between the knowledge statuses construed in speaker A and B's utterances. A assigns epistemic rights to B roughly equal to his own. In the TQ, A puts forth his own proposition with medium epistemic certainty, and solicits

confirmation from B. Hence, it is analysed as a statement-question blend, not as a real question eliciting knowledge (see Section 3.2).

(23)   A: ^or . [@:m] - ((it'd ^mean one would have to ext=end#) and ^say it's very worthwh\ile# (^w/ouldn't it#))
       B: [@:] ^very ^very "!much worth the :tr\ouble#   (LLC: 1.1)

Berry's roles also provide criteria to distinguish TQs eliciting action, where the speaker is the secondary actor, as in (19) *go a bit sl\ower w/ill you#*, from ones offering action, e.g. (20) *I'll ^give you my 'name and ad:dr\ess sh/all I#,* where the speaker is the primary actor who has to carry out the action. However, the action roles by themselves do not provide clearer criteria than the contrast between asking and offering goods-and-services in the speech function model. As noted in Section 3.2, an example like (5) above, *^sit down h\/ere would you*, could be viewed as either offering or demanding action. Contextually, the speaker could also be viewed as either a primary actor, offering a seat, or a secondary actor, demanding the hearer to sit down. As we will see in the next section, it is the "different discourse consequences" (Berry 2016: 37) predicted by the exchange model that allow one to distinguish offers from directives.

4.3   TQs eliciting knowledge or action: Classifications and predictions of the exchange model

4.3.1   *Offering TQs: da1*

In Berry's exchange model, offers are da1 moves, and a successful offer-of-action exchange has three obligatory moves. The primary actor contributes two moves to the exchange (Berry 1981b: 24), the verbal offer, da1, and the required (non-verbal) execution of the action, a1. For the secondary actor the obligatory verbal move is to accept or reject the action, a2. These three obligatory moves are illustrated in (24), in which a lecturer (B) and an estate agent (C) fix an appointment. The lecturer offers to be present at an appointment for which she can choose the time (da1). This is accepted by the agent as secondary actor (a2), before the lecturer definitively commits to it (a1).

(24)   C: **^now** we're !making this _wh/en# ^W/ednesday#
       B: ^W/ednesday# well ^I'll say I'll !b\/e 'there# be^tween 'half past   da1   ab
          'three and f\our sh/all I#
       C: O^/K# I'll look ^forward to s\eeing you#   a2   ab
       B: ^f\ine# ^thank you very *'much in:d\eed Mr 'Parker#   a1   ac
                                                                                   (LLC: 8.1p)

4.3.2   *Directive and questioning TQs: a2 and k2*

On Berry's exchange analysis, directives are a2 and true questions k2 moves, which predict an obligatory actual response as well as optional follow-ups. Revealing the intrinsic link of the follow-up moves to the two preceding moves lies outside the scope of an adjacency pair analysis.

Example (25) illustrates an exchange eliciting action, where the initial a2 move is a directive, followed by the assent verbalized by the primary actor, a1, which is followed by the secondary actor's acknowledgement. Berry (1981b) stresses that if the secondary actor initiates an eliciting exchange, a2 is the only obligatory verbal move. This is illustrated in (26), where there is just one verbal a2 move: *what's th/at#* is a k2 move starting a new exchange.

(25)   A: <u>go a bit sl\ower w/ill you#</u> a2   ab
      B: y\es#.   a1   ac
      A: ok/ay#   a2f   as

(COLT: B141101.PRO)

(26)   A: <u>ign\ore the damn thing will you#</u> a2   ab
      B: what's th/at#   k2   pb

(COLT B141102.PRO)

Examples like (5), reproduced as (27), which in a speech function analysis can be viewed as either offers or commands, are analysed by Berry (1981b: 31) as unambiguous directives. Her argumentation for this is that, unlike offers, (27) cannot have a da1 move, but has to contain an a2 move followed by the obligatory non-verbal action, a1. She views directives as a general class subsuming various subclasses such as commands, requests and invitations, like (27). We note in addition that this analysis does justice to the grammatical semantics of the imperative anchor, which holds the subject responsible for carrying out the action (Halliday 1985: 71ff), i.e. construes the subject 'you' as the primary actor. It entails the interpretation that, in inviting someone to sit down, the speaker is really a secondary actor, who hopes that the hearer will sit down.

(27)   B: ^r\/ight# ^sit down h\/ere would you# - - - (LLC: 3.5a) a2   ab
      [A sits down]   a1   ac

Examples (28) and (29) illustrate exchanges eliciting knowledge, with a follow-up move, realized by what Berry (1981c: 48) calls an "Oh-class item". The choice of item is clearly related to the orientation of the eliciting move k2 and the information provided in k1. *Ah* in (28) is a non-surprised acknowledgement, while **^oh you d\id#** in (29) registers surprise to the non-expected proposition in k1. Such k2f moves, if present, are recognition marks of the eliciting nature of the initial move.

(28) B: ^you don't !g\/et yours 'do you# +((1 to 2 sylls))+ k2   pb
      A: +^not till Fr\iday# ^n\o#+   k1   pc
      B: ^\ah#   k2f ps

                                                              (LLC: 7.3i)

(29) A: ^haven't been 'up to …W\ales a'gain h/ave you# ^or k2   pb
      B: [@:m] ^I !went 'up at :E\/aster# -   k1   pc
      A: *^oh you d\id#*   k2f ps

                                                              (LLC: 7.3f)

In Section 3.3, we touched on the question of how best to analyse two indepen-dent clauses uttered successively by one speaker, as in (7) above, reproduced as (30). As noted there, on a speech function analysis, B's two sentences could be viewed as the speaker answering his own question. This entails that speaker B first pro-motes himself from secondary to primary knower, but is then downgraded to sec-ondary knower by A's non-confirming response. From an exchange perspective, B's two sentences might be analysed as two acts of one k2 move, in which the speaker first formulates a general wh-question ('what happens?'), which he then reformu-lates as a more specific question with positive orientation ('this comes right off, does it?'). A's move would then be k1/pc, which, we could argue, deals with the same propositional content as the second act of k2/pb, but reverses its polarity. Assigning the secondary and primary knower roles in this way seems reasonable, but it could be questioned whether we are really dealing with the same proposition in B's and A's turns.

(30) B: ^what h\appens# ^this 'comes right \/off does it# k2   pb
      A: no it screws in tight and the [@:m]   k1   pc

                                                              (LLC:1.7)

4.4 Queries and challenges

In the previous three sections, we dealt with exchanges where the co-participants follow the expected structure and choose supporting moves. However, speakers may choose non-supporting moves that either put the expected structure on hold (i.e. queries), or abort it (i.e. challenges). These two moves "differ in their discourse consequences: once a query and the moves that follow from it have been completed, there can be a return to the expected pattern of the original exchange; this is not possible in the case of a challenge, which effectively aborts the exchange" (Berry 2016: 47). As we will see in this section, both queries and challenges can be realized by TQs.

Berry (2016: 47–49) distinguishes three basic types of queries, depending on whether they query a textual, experiential or interpersonal element. With a textual

query speakers check whether they have understood the text correctly, e.g. (31). An experiential query checks on experiential information, e.g. (32). An interpersonal query questions the knowledge status of the co-participant, as in (33), where *you're ^s\ure of that /are you#* queries the primary knower status of B with a TQ that explicitly codes the epistemic modal position, while referring to the proposition by *that*. As predicted, once the query and its following moves have been completed, the exchange picks up where it was interrupted. We want to point out that embedded querying sequences may also involve three, rather than just two, moves, as in (31) and (32). Like exchanges eliciting knowledge about proposition bases, the speaker asking a query may follow-up the response to this query by a move, which we propose to code as qf, and which, like a k2f move, is typically realized by an item from the 'Oh'-class, like *Ah* in (31) and *^[=m]# . ^[=m]# - . ^I s\ee#* in (32).

(31) A: ^what 'time is your - b\oat train# or *^whatever it*
      B: *^pl\ane#*
      A: "^pl\/ane 'is it#   q
      B: ^y\eah# ^y\eah#   qr
      A: ^/\ah#   qf
      B: ((be^cause syll)) . ^y\es# - - I've ^got to 'be at 'London :Airport at :f\ourish#
      A: ^\oh# -
                                                                (LLC: 3.2b)

(32) B: so ^this didn't come 'off very :w\/ell# . [@:m] . ^rather r/\am'shackle 'group#
      A: ^[\m]#
      B: and ^there were !some . ((con!siderable :n\uisances#))
      A: ^this was 'with the the the :Aldwych :\alpinists w/as it# *^[=m]#*   q
      B: *^y\eah#* ^y\eah#   qr
      A: ^[=m]# . ^[=m]# - . ^I s\ee# - -   qf
                                                                (LLC: 7.3f)

(33) B: he ^says the con!traction 'makes it quite n/ormal# but the ^other d\oesn't# - - -
      A: you're ^s\ure of that /are you#   q
      B: ^y\eah# - ^pretty c\/ertain# - - -   qr
         be^cause I 'mean 'I was 'I was a!{gr\eeing} with :what the !t\ext said#
                                                                (LLC: 8.4j)

Strikingly, TQs functioning as queries all have constant polarity in our dataset. As pointed out by Kimps (2007), a common function of constant polarity TQs is the recent interpretation of new contextual information for which verification is sought. In queries, this tentative recent interpretation pertains to a textual,

experiential or interpersonal element of the proposition at issue in the exchange. No new proposition is being formulated. For this reason, they are not TQs eliciting knowledge in the sense of proposition completion.[11]

Berry (2016: 50–51) also classifies challenges along metafunctional lines. A textual type of challenge consists in not giving the expected response, and thereby aborting the exchange, as in (34), where the co-participant hums rather than responds. Experiential challenging involves the introduction of a new proposition, as in (35), where A's proposition that the structural report and the survey are two completely different things is challenged by B's claim ^both 'done by the _Abbey !N\ational 'though# . *^/are they# .

(34) A: he l\ooked at it# <u>he looked at it h\as he#</u>
      B: <humming>   (COLT: B136105.PRO)

(35) A: *[@:m]* . a ^full str\uctural report# has been ^d\/one# - and the ^two
          were 'being con!f\used# - ^and we've !n\ow . :{found !\out#}# ^who's
          'doing the str\/ucturals and# and ^who is :doing the !s\urvey#
      B: **^\y/es#**
      A: **which** are ^two com:pletely :different !th\ings#
      B: ^both 'done by the _Abbey !N\ational 'though# . *^/are they# . ^or . ^or
          [d]*
      A: *[@m] - ^n\o#* ^they're . ^they're !subcon'tracted !\out#
      B: ^[\@h@]# ^\I +see#+   (LLC: 8.1a)

Interpersonal challenging, finally, involves co-participants competing for the status of primary knower. A possible example of this is (36). B's eliciting move in the form of a wh-interrogative presupposes that the starting time for the U G M still needs to be decided on, and she asks who is going to make the decision. Whereas B seems to act as a secondary knower by asking this information, she also assumes primary knower status with regard to the presupposed proposition. A rejects this presupposition, assuming primary knower status over B, and states that the meeting is known to start at ten past one. B then challenges A's primary knower status by disagreeing with the starting time, which she overrules by announcing that she will be there ten minutes earlier. Each successive move in (36) can thus be analysed as an interpersonal challenge.

(36) B: Who's going to decide when the U G M starts today
      A: <u>Well it's going to start at ten past \one# /isn't it#</u> uh <unclear-words>
      B: No cos I 'll be there at one   (ICE-GB:S1A-068-143)

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11. In Kimps (2018), queries are viewed as a subtype of question.

All types of query have as immediate effect that they block a return to the previous exchange. However, a challenge can be counterchallenged by a return to the earlier proposition. In a context like (36), A could continue: *Whatever you say, it's been decided that the U G M starts at ten past one.*

5.   Concluding discussion

In this article we have compared Halliday & Matthiessen's speech function and Berry's exchange structure analysis, with regard to TQs demanding information/knowledge or action. While both are rooted in Systemic-Functional theory, they differ as descriptive models in three main respects: (1) metafunctional location, (2) linguistic realization of the interpersonal functions, (3) and syntagmatic structure.

The speech function model can be described as follows:

1. It is located strictly within the interpersonal metafunction.
2. Its interactional roles are giving and demanding as primarily realized by mood and intonation.
3. Its basic syntagmatic structure is the adjacency pair, consisting of an independent clause and the response it can co-occur with, which entails that a speech function can predict only one response.

Berry's exchange structure can be described as follows:

1. It is conceptualized as having a textual, experiential, and interpersonal layer.
2. The interactional roles are primary and secondary knower or actor, which are primarily coded by modality and polarity.
3. Its central syntagmatic structure is the exchange, which can be anything from one to five moves. A move often predicts several other moves.

The first two differences, metafunctional address and formal coding of the interactional roles, are at least partly a matter of articulation and emphasis. Regarding the metafunctional location, speech functions are described in terms of the interpersonal resources that most directly realize them, but there is nothing in principle against correlating these with experiential and textual layers. In Berry's model, the exchange is delimited in terms of constant experiential content. We noted that this principle has to be operationalized more precisely. How much lexico-grammatical variation can we tolerate while still calling variants one proposition or action? As to the interactional roles, mood, intonation, polarity and modality are discussed in both approaches, but different resources are foregrounded as primary coders. In our quest for functional and formal criteria to identify TQs eliciting knowledge or action, we concluded that Berry's roles of primary and secondary knower/actor

shed more light on our TQ data than Halliday & Matthiessen's distinction between giving or demanding information or goods-and-services. We proposed that Berry's roles relate fundamentally to epistemic and deontic modal meaning, which are coded by polarity and modality in indicatives and by polarity in imperatives, but may also involve inferencing particularly for utterances in the deontic domain, where the co-participants have to work out "what is meant" from "what is actually said" (Berry 1981a: 140). This whole area needs to be developed and clarified further.

The third and final difference, the basic syntagmatic unit, is less easy to bridge or resolve: are adjacency pairs or exchanges the better tool for analysing the dynamics of discourse? The answer at this stage seems to be that each has its strengths and weaknesses. Some of our conversational data involving TQs are captured well by dyads, but other sequences seem prototypical triads. When we are dealing with multiple predicted responses, the exchange analysis does offer the advantage of recognizing that "a given interact can give rise to more than one other" (Martin 1992: 147). On the other hand, the exchange model as yet does not capture all the possible relations between moves either. Challenges, for instance, are defined as unpredictable aborters of an exchange, yet the challenge itself and further reactions to it have connections of some sort to preceding moves. We have suggested that these connections can be accounted for by overlapping adjacency pairs. The relations between both adjacent and non-adjacent moves in fact seem more complex than can be captured by either model at this stage.

There is nothing inherently preventing the analyst from combining the two types of analysis to try and capture all the relations that are there. For many of the patterns discussed in this article some combination and further development of the principles of adjacency and exchange would seem to offer the best chances for doing so. Berry (1981a) and Martin (1992) have stressed that exchange structures and adjacency pairs do not exclude each other. The way forward may well lie in identifying all the remaining gaps and addressing them in terms of a synthesis incorporating both adjacency and larger exchange structures.

Acknowledgements

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