Intonation and Exchange: a dynamic and metafunctional view.

Introduction

Kretzschmar (2009) notes that the defining feature of what he labels British Neo-Firthian linguistics is a focus upon text as a unit of analysis. Within Neo-Firthian approaches he identifies both Systemic Functional Linguistics (SFL) and the Birmingham School of Discourse Analysis. It is my aim in this chapter to build upon the work of SFL scholars who have incorporated and modified Birmingham School Exchange Structure and illustrate how the further incorporation of intonation into the description of exchange structure allows us to describe the dynamics of text flow across a discourse. In this paper I restrict my focus to the close examination of a single dialogue between two University undergraduate students and a short extract of competitive talk between political rivals involved in a pre-election televised debate. This will allow me to examine the functioning of exchange structure in two very different types of speech: one conversational and the other argumentative. I anticipate that the former, but perhaps not the latter, will adhere to what Burton (1978: 140) labelled the polite consensus model of conversation and that hence the latter will prove more of a challenge to the model. Before I examine the data however I will first briefly sketch out the original Birmingham School System as well as pointing out a number of problems and suggested modifications to the original system in order to illustrate how consideration of intonation allows us to describe both the dynamics of textual flow and how speakers manage their interactional needs on a moment by moment basis. I will argue that in cooperative discourse that the definition of an exchange be expanded to include the negotiation of affiliation as well as action and information.

1 Exchange Structure.

Sinclair and Coulthard (1975), based upon their investigations of naturally occurring classroom discourse, proposed a model of exchange structure in order to establish a grammar of discourse analogous to the clause grammar proposed by Halliday. Their grammar was underpinned by two principles Rank and Tactics (or adjacency). The discourse ranks posited are from highest to lowest: LESSON > TRANSACTION > EXCHANGE > MOVE > ACT with the higher ranks being filled by the lower ones. In this chapter, I will focus on the EXCHANGE as the highest rank to be discussed. Sinclair and Coulthard argue that ACTS, the lowest rank in the hierarchy, most closely equate with clauses and MOVES with sentences.

Example 1, taken from the cooperative dialogue[1] illustrates a number of problems with the above descriptions which are chiefly caused by attempting to describe the flow of spoken discourse without taking due account of the phonic channel. The first is that as B's response is a minor clause it is a move which is realised by a single act in a manner analogous to the phone /aɪ/ which may realise a phoneme in a word such as *tide*, a syllable in a word such as *idea* or the word *eye*. A solution to help distinguish between acts and moves, not itself without problems as will be seen below, is to redefine acts and moves in terms of a used grammar of speech (Brazil 1995) and not exclusively ground their identification solely in terms of lexicogrammatical categories. Thus an act is realised as a tone group which does not in and of itself constitute a turn, a move as a tone group or series of tone groups which are

[1] Examples from the cooperative dialogue have speaker labels A and B while those from the political dialogue have speaker labels GB, DC and NC. Made up or altered examples are asterisked.

coterminous with an independent clause. Below I will describe moves in relation to increments. An exchange must contain a completed increment and may contain other optional moves.

Increments are units of speech which map out movement word by word from an initial state to a target state. An initial state refers to the relevant background state of knowledge prior to the act of speaking assumed by the speaker to be shared between the interlocutors[2]. Upon completion of the telling increment, the speaker has achieved target state: the state assumed to be shared by the speaker and hearer after the articulation of the increment. Between initial and target state the speaker may pass through numerous intermediate states. Increments are formally identified by having fulfilled three criteria. The first is that the speaker has satisfied a grammatical criterion by producing a string of speech which satisfies grammatical expectations and has the potential to represent a meaningful independent contribution to the discourse. The second is that the increment contain a tone group containing a falling tone. The third is that the increment, in the context in which it was uttered, represents a telling or an asking, see (Brazil 1995, Author 2010, Author et al forthcoming) for further details.

Berry (2016:44) identifies an exchange as containing the negotiation of a single proposition or proposal and so example 1, with Birmingham coding is a telling exchange while example 2 is an asking exchange.

1	A: | I don't like \/concrete either |	Inform
	B: | uh \/no |	Respond
	A:	(Feedback)

Speaker A produces an Informing move (I) realised as a single tone unit which B responds to by acknowledging receipt of the information through an optional responding act (R). In this particular case there is no optional feedback, or as Frances and Hunston (1992: 123) describe it follow up move (F) – though one could easily imagine one such as *yeah*. Thus, in telling exchanges such as 1 only the informing move is obligatory. However, in the redefined terms proposed here, as neither speaker has produced a falling tone which would have indicated the exchange of information there is no completed exchange[3].

2	B: I is it Venice that's \sinking|[4]	I	move
	A: |\Ya |	R	act = elided move
	B:	(F)	optional unrealised move

Conversely in 2, there is a complete asking exchange as B's first contribution contains a falling tone and along with A's following contribution satisfies the grammatical criterion. B's y/n question realised as a tone group with a falling tone signals B's intention to inform the hearer

[2] In light of the discussion on knowledge in section 2 we will see that these definitions will require some adjustments.

[3] I will revisit this example in Section 3 as example 16 and suggest a possible solution as to how code this example.

[4] The significance of A's falling tone vis-à-vis the assumed information states of the interlocutors will be described below in Section 3.

that a confirming responding move is required. A's response completes the exchange as there is no overt F move. Though once again it is easy to imagine one such as *thanks* and indeed a further follow up such as *you're welcome*.

Even the two basic examples presented above illustrate a number of serious shortcomings with Exchange structure as originally proposed by the Birmingham School. The first of which, alluded to above, is the lack of consideration of intonation, a point partly remedied by the incorporation of David Brazil's model of Discourse Intonation, most clearly set out in Brazil (1997) (especially see relevant chapters in Coulthard and Montgomery (1981)). However, Brazil's insistence that intonation functioned to signal a speaker's moment by moment assessment of the state of knowledge shared between speaker and hearer was not fully developed in order to make the exchange more dynamic. Nor was there any consideration of how intonation choices signal information structure and hence allow the speakers to manage the context (see Author 2016). Furthermore, Brazil's view of prosody enables what Berry (1981a: 120) criticised as non-metafunctional thinking. She indicated her astonishment at Sinclair and Coulthard's claim that they had found a metafunctional approach to the analysis of discourse to be not "a useful starting point" (1975: 12). In a series of publications, (1981a, b, c and 2016) she outlined her view of the exchange as containing three aspects: Textual, Interpersonal and Ideational. To illustrate, I have re-presented examples 1 and 2 as 3 and 4 and coded for all three metafunctions.

While the full meaning of Berry's coding will be explained when and as needed we can see that the three metafunctions are coded independently. The textual metafunction retains the original I R F coding while the interpersonal metafunction codes knowledge roles. K1 and K2 refer to speakers occupying the primary and secondary knower slots respectively, "f" to follow up and "d" (example 5) to deferred. Speakers in K1 position transfer knowledge while those in K2 position receive it. On the ideational layer the "p" refers to a proposition with "b" and "c" as base and complete respectively. Mandatory elements following Berry are underlined.[5]

		Text	Int	Id
3	A: | I <u>don't</u> like \/<u>con</u>crete either |	<u>I</u>	<u>K1</u>	<u>pc</u>
	B: | uh \/<u>no</u> |	R	K2f	ps
	A:	(F)		
4	B: I is <u>it</u> <u>Ve</u>nice that's \<u>sink</u>ing|	<u>I</u>	<u>K2</u>	<u>pb</u>
	A: |\<u>Ya</u> |	<u>R</u>	<u>K1</u>	<u>pc</u>
	B:	(F)	(K2f)	(ps)

It can be seen even from these two examples that the 3 different metafunctional aspects can be disaggregated. For instance, in (3) the obligatory <u>K1</u> and <u>pc</u> moves correspond with the textual move <u>I</u> but in (4) they correspond to <u>R</u>. If we consider a made up example in the

[5] O'Donnell (1990) and Martin (2000), based on data that does not fully conform to the polite consensus model, have suggested revisions to Berry's coding. Martin's revisions pertain to the interpersonal metafunctional layer while O'Donnell's focus is on both the ideational and the interpersonal layers. In the chapter I will critique both views and ultimately incorporate some of O'Donnell's suggested revisions to the ideational layer – see also discussion about dynamism below.

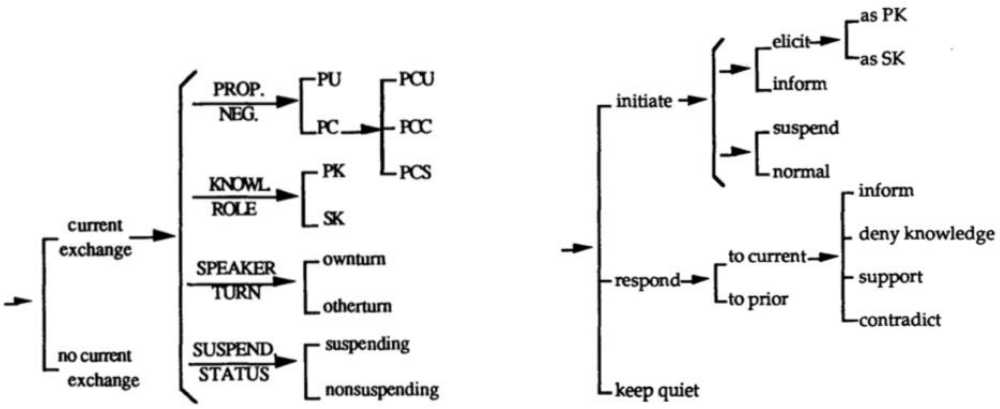
context of a quiz or school geography lesson in (5), we can see further disaggregation between the obligatory elements on the interpersonal and ideational layers. The K1 move corresponds with F and ps which codes proposition support. In this example the teacher/quizmaster tests the respondents knowledge of which city is sinking. He/she assumes the role of the primary knower but only imparts the relevant confirmatory information once the student/contestant has had an opportunity to speak.

*5 Teacher/Quizmaster:	Is Venice sinking?	I	dK1	pb
Pupil/Contestant:	Yes.	R	K2	pc
Teacher/Quizmaster:	Yes, that's right.	F	KI	ps

2 Dynamic Exchanges

While Berry's coding provides an elegant and comprehensive account of exchange structure and shows how it can be incorporated within an SFL framework, a number of issues remain outstanding. The first of which is O'Donnell's (1990) point that Berry's work leads to a description of the product rather than the process.[6] Models such as Berry's work detail the choices available in the text as it unfolds and while it is as O'Donnell (1990: 305) concedes more dynamic than a superficial reading would suggest, he (O'Donnell 1999) notes that truly dynamic models go further and model the effect an utterance has on the context by for instance increasing or decreasing the probability of future utterances. Berry (2016:36) acknowledges O'Donnell's point, but notes that for text analysts such as herself there is a trade-off between full descriptive adequacy and ease of use for the analyst.

O'Donnell's (1990) revised model consists of two strata: one of which explicates all the possible moves while the other describes the exchange context and represents the various points of the exchange structure on the ideational, interpersonal and textual levels. The context of the exchange licenses the behaviour potential and generates the exchange move by move, while actualised moves modify the context of exchange by limiting which choices are available. In other words O'Donnell's model is able to do more than set out the options that are available at particular points in the discourse. It shows how prior utterances increase/decrease the probabilities of various options being taken up in the following discourse. Figure 1 illustrates:



[6] See Bartlett this volume for a useful classification of degrees of dynamicity.

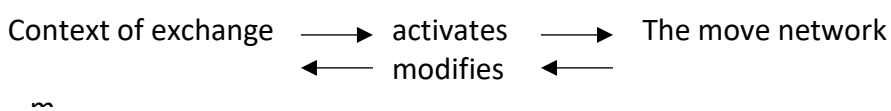


Figure 1: A dynamic view of exchange based on O'Donnell 1990

In O'Donnell's model speakers negotiate the proposition either as primary or secondary knowers and as initiators or non-initiators while simultaneously having the right to suspend their contribution. The choice of SUSPEND STATUS allows the speaker to deny or contradict and generates challenges and queries which must be resolved prior to returning to the previous exchange. On the ideational layer Berry (1981, 2016) classed exchanges as consisting of a mandatory pc (proposition complete) which in asking exchanges was preceded by pb (proposition base) and optionally followed by ps (proposition support) as shown in examples 3 to 5.[7] O'Donnell (1990: 309) on the other hand draws a primary distinction between whether the proposition is completed or not (PC vs PU) and if the proposition is completed whether it is unsupported (PCU), contradicted (PCC) or supported (PCS), see examples 6 – 10.

6

B:	I is it Venice that's \sinking|	I	K2	PU
A:	|\Ya |	R	K1	PC

7

B:	| uh /no I read an article in the /Guardian |	I	KI	PCU
	| I think it was erm /yesterday |			
	| um –where they were talking about |			
	| climate change and \flooding |			

8

B:	| I guess cause the British climate is \relatively |	I	K1	PCU
	sort of \unextreme| we kind of got away for however			
	long /building | pretty /bad buildings |			
A:	| \/ya |	R	K2f	PCS

9

GB[8]	| but the \issue here is | will you Lcontinue to \fund the police |	I	K2	PU
DC	| \/Yes of course |	R	K1	PC

10

NC	| Gordon \Brown | what are you \going to do |	I	K2	PU
GB	| It would be more \helpful | if you would support	R	K1	PCC
	identity \cards | for \/foreign nationals | instead of \opposing them |			
.....				
NC	| I'm just \asking | for a simple, honest answer |	I	KI	PCC

[7] In action exchanges Berry's coding would be ab, ac, as. O'Donnell restricts his discussion to propositions but it would seem that for proposals the system could easily be labelled as ACTION NEG and the primary choices available being AU or AC. The choice of AC results in 3 further options ACU, ACC and ACS.

[8] GB, DC, and NC refer to the British politicians Gordon Brown, David Cameron and Nick Clegg.

to a big \question |

These examples illustrate how O'Donnell's coding on the ideational layer illustrates the options open to speakers in real time and also show how speaker utterances constrain or prospect further choices. In (6) the speaker, who assumes the K2 role produces an uncompleted proposition which is completed by his interlocutor. In (7) the speaker presents herself as the primary knower and produces an unsupported complete proposition.[9] Conversely in (8) A produces a PCS move. However, in both cases irrespective of whether the complete proposition was supported or not, it has succeeded in modifying the context by achieving target state. In example (9) GB assumes the role of secondary knower and assumes the K2 role. The proposition is completed by DC but does not receive support from GB. Finally, in (10) NC assumes the role of secondary knower and produces a PU move. GB as primary knower, however does not directly address the question and produces a PCC move. This constrains NC to himself assume the primary role and produce a further PCC move in a separate exchange. It is clear that the description of exchange structure above is capable of modelling text dynamically. Each option unfolds as a direct result of the previous one and following moves are constrained or afforded by previous ones (Martin 1985). Truly dynamic models, however, must be able to separate some aspects of the context from the here and now (O'Donnell 1999: 95). I will reserve judgement as to whether the model described above is truly dynamic until after a discussion of the roles of primary and secondary knower and the moves associated with such. In the next section we will also see the importance of considering the ideational layer in terms of serial tactic relations[10] (Martin: 2000).

Muntigl (2009) is an important reinterpretation of knowledge and knowledge roles within and between exchanges. He notes that the early work on exchange structure examined transactional discourses such as teachers' in-class interactions with students and that this led to a view of conversational interaction, criticised by Grosz and Sidner (1990: 421) as the *master-slave assumption*, where the speaker is the master who transfers knowledge to the hearer. Instead he rejects the view that knowledge is a resource capable of being transferred and argues it is rather a resource which speakers in their interactions may claim higher, lower or no access to on a moment by moment basis.[11] On pages 260-61 Muntigl provides the following definitions:

[9] I do not have access to a video recording, so it is possible that the other speaker produced a non-verbal PCS contribution by a head nod or another body gesture.

[10] A further potentially fascinating point would be to extend Martin (2000: 38)'s view that exchange structure should be examined metafunctionally as tiers of orbital and serial (ideational), prosodic (interpersonal) and periodic (textual) structure. This leads him, also Eggins and Slade (1997), to consider the possibility that exchange boundaries depend on whether the speakers wish to close down the exchange or maintain the discussion. He suggests that in pragmatic discourses, such as those examined by the Birmingham School, mood choices signal closure while in casual conversations where interpersonal relations are at risk they use Appraisal (Martin and White 2005) to keep the exchange open. Thus, in casual conversations the interpersonal layer dominates and exchange boundaries are signalled by shifts in Appraisal systems and targets. Unfortunately, limited space does not allow for an examination of how Appraisal telos is realised prosodically in speech and how this may help speakers keep track of contextual factors beyond the here and now and how knowledge is negotiated and contested in extended stretches of spoken discourse.

[11] Muntigl's claims emerge from a detailed and careful reading of the conversation analytical social epistemological literature and illustrates the importance for Systemic Functional Linguists in reading work

Epistemic rights – includes (1) a speaker's degree of accessibility to knowledge (to what degree is someone expected to know?); (2) the right to make a claim to knowledge; (3) a speaker's interest in ensuring that the proposition gets accepted.

Primary Knower – A speaker who claims primary epistemic rights or is positioned by another speaker as having these rights.

Secondary Knower – A speaker who claims secondary epistemic rights or is positioned by another speaker as having these rights.

This re-definition has the advantage of ensuring that speakers' update their epistemic rights move by move and do not have to wait for a new exchange to contest the distribution of knowledge roles. Table 1, based on Tables 3 to 5 of Muntigl (2009) summarises Muntigl's view of the linguistic means by which speakers contest and promote their own and other speakers' epistemic positioning. Up arrows signal a raising of a speaker's epistemic rights while down arrows signal the converse.

Table 1: The linguistic realization of epistemic positioning in exchanges

Move	Slot	Epistemic Position	Linguistic realisation
Initiate	K1	↓ [+k], [self]	modality, evidentials, declarative + tag
		↑ [-k], [other]	declarative +tag
Initiate	K2	↑ [-k], [self]	factive predicate
		↓ [+k], [other]	modality, restrictive y/n question
Respond	K1	↓ [+k], [self]	modality
		↑ [-k], [other]	accessing the KI slot though an embedded query
Respond	K2f	↑ [-k], [self]	contradiction, oh-preface
		↓ [+k], [self]	counterclaim, agreement token
Respond	K1	[-k], [self]	deny knowledge
		[+k], [other]	seek confirmation from 3rd party source
Respond	K2f	[+k], [self]	account, counter-claim
		[-k], [other]	contradiction

Muntigl's careful taxonomy is however incomplete. Speaker's intonation choices signal their certainty or lack of certainty towards the information contained in a tone group (Halliday 1967, Halliday and Greaves 2008). Thus, they interact with lexicogrammatical resources to position the speaker or hearer epistemically. To illustrate, I will re-examine examples 6 to 10 reprinted as 11 to 15 and incorporate intonation into the description. Tonic syllables are underlined, tone group boundaries are indicated by |. The symbols \, /, \/, /\ and – and indicate falling, rising, fall-rising, rise-fall and level tone movement respectively.

11			B	A	
B:	I is <u>it</u> <u>Ve</u>nice that's \<u>sink</u>ing|	<u>I</u>	↑K2	K1	PU

from cognate theories. Berry (2016: 53), to her credit, is happy to accept Munitgl's redefining of the terms primary and secondary knowers. It hardly needs mentioning that the present author believes that non-Systemic Functional Linguistics would benefit immensely from reading SFL theory: a noticeable example being Berry's work on Exchange structure.

A: |\Ya | R ↑K2 K1 PC

Speaker B positions herself as the secondary knower but her selection of falling tone positions her as projecting an expectancy that A will confirm the truth of her proposition that *the place that is sinking is Venice*. Her initiating move positions both conversational partners as being responsible for the proposition that *Venice is sinking*. Had A wished to contest B's presumption politeness would have dictated that more than a minimal response was required. In other words, the secondary knower does not require the primary knower to transfer any knowledge. Instead what seems to be at stake is that B wishes to check that she and her hearer are on the same page. Rather than tell that *it is Venice that is the location of the sinking* she prioritises social relations by not presuming to tell something which B is likely to know.

12

		B	A	
B:	| I read an article in the /Guardian |	I	↓KI	↑K2f	
	| I think it was erm /yesterday |		↓KI	↑K2f	
	| um –where |[12]				
	| they were talking about climate change and \flooding |		KI	K2f	PCU

In (12) the speaker produces an initiating K1 move which realises a completed proposition which is unsupported. However, her selection of rising tone suggests that she is open to a challenge: A is projected epistemically as having access to the knowledge of where and when the article was published. On the other hand she signals that she has full access to the knowledge of the content of the article and does not prospect a challenge. Her proposition neither requires nor receives support from the secondary knower.

13

		B	A	
B:	| I guess cause the british climate is \relatively	I	↓[13]K1	K2f	
	| sort of \unextreme|		K1	K2	
	|we kind of got away for however long /building		↓K1	↑K2f	
	| pretty /bad buildings |		↓K1	↑K2f	PC
A:	| \/ya |	R		↓K2f	PCS

In 13 B produces a completed proposition which is supported by A's K2f move. But A's selection of a non-falling tone suggests he is downplaying his role as secondary knower. Thus, his support of the completed proposition is signalled as no more than signalling that he has no reason to contradict B's proposition and is prepared to accept it. He does not claim independent knowledge of the standard of British building.

14

			GB	DC	
GB	| but the \issue here is | will you continue to \fund the police |	I	↑K2	↓K1	PU
DC	| \/Yes of course |	R		↓K1	PCC

[12] The level tone signals that the speaker was planning the rest of their utterance and hence I have not coded it on the interpersonal level.

[13] The evidential guess signals lowered epistemic responsibility.

Consideration of prosody shows that 14 is not as straightforward as it seemed when presented as 9. GB's first contribution assigns the role of primary knower to DC but at the same time boosts his own epistemic positioning. In the immediately previous cotext he has expressly mentioned DC's refusal to expressly state that he will maintain levels of police funding and hence implied that DC is not committed to maintaining such levels of funding. In the initial move GB signals that he has rights to claim access to knowledge, including that of DC's future plans, and hence he lowers DC's rights. DC's K1 contribution realises a contradiction. His selection of a fall-rise downplays his initial epistemic positioning while realising an implied challenge to GB's prior assertion. In the following discourse he extends his argument and states his commitment to police funding.

15		NC	GB	
NC	| Gordon \Brown | what are you \going to do |	I K2	K1	PU
GB	| It would be more \helpful |	R	K1	
	| if you would support identity \cards |		KI	
	|for \/foreign nationals |		↓KI	
	| instead of \opposing them |		KI	PCC
……				
NC	| I'm just \asking | for a simple, honest answer |	I	KI	PCC

NC projects himself as secondary knower and produces an incomplete proposition which presents GB as being required to do something. However, GB, while prepared to take up the expected role, does not complete the proposition. Instead his proposition is a challenge where he produces a sequence of K1 contributions. In one he downplays his epistemic responsibility perhaps to raise the issue that NC is opposed to all forms of identity cards. This coupled with his use of irrealis construes Clegg as being politically unhelpful and functions as a negative social identity face-attack on Clegg's political competence. By lowering Clegg's face he simultaneously boosts his own (Spencer-Oatey 2005).

Now that we have considered knowledge not in terms of a resource which is passed like a parcel between speakers but rather as a resource which speakers can assume and assign responsibility for it is time to re-consider example 1 reprinted as 16.

16		A	B	
A: | I don't like \/concrete either |	I	↓K1	↑K2f	PaU[14]
B: | uh \/no |	R	↓K1	↑K2f	PaS

A assumes the role of primary knower but his intonation choice downplays his epistemic responsibility. He does not expand the common knowledge he shares with B by telling her that like her he is not a fan of concrete but instead suggests that they both have prior access to knowledge of the other's likes. B as secondary knower in the K2f move similarly signals that she did not have to be told of the non-liking of concrete. And by so doing she also signals that she too is primarily interested in maintaining and developing the interlocutors' social relationship. There is no transmission or negotiation of a new proposition. Instead A and B signal their affiliation by lowering their own claim to knowledge and thus boosting their

[14] The addition of "a" to the coding "PU" signals that the utterance is affiliative.

hearer's responsibility for knowledge. Hence while there is no exchange of knowledge or action there is an exchange of affiliation and we can tentatively label this exchange a complete affiliative exchange. Such a move has consequences for our earlier definition of increment and our stipulation that an increment results in the achievement of target state as will be explained below.

Target state was defined above as the state assumed by the speaker after the completion of the increment and one of the three criteria was the presence of a falling tone which signalled that an act of telling has occurred. Yet as our review of Muntigl (2009) has illustrated knowledge is better considered in terms of a resource which people lay claim to rather than as a transferable commodity. Furthermore, our evaluation of our own access to knowledge is not invariant but rather partly depends on our previous social and physical interactions (Nagel 2014). And while the definition of knowledge or information remains highly contestable within the epistemological literature[15] it clearly relates in some manner to individual beliefs of what conversational partners think. Thus, I propose the following redefinitions.

> *Initial State:* The degree of accessibility to knowledge and the right to make a claim to that knowledge as positioned by a speaker. Initial state exists prior to the commencement of the increment
> *Target State:* The degree of accessibility to the updated knowledge and the right to make a claim to that knowledge. Target state is achieved after the satisfaction of an increment. In discourse each target state feeds into the following initial state.
> *An increment*: is a stretch of speech which fulfils three criteria:
> (i) The satisfaction of grammatical expectations; the grammatical chain must be able to form an utterance which can stand on its own;
> (ii) The grammatical chain must contain and be finished by a fully formed tone group;
> (iii) In the context in which it was produced it must represent an acknowledgement that both speakers have claims on the updated knowledge resource.[16]

Using these re-defined terms we can see that example (16) above fulfils the criteria to be classed as an increment. The target state reached is joint interlocutor access to the knowledge that they share the same view of concrete.

It is time now to reconsider what a truly dynamic exchange system would look like. O'Donnell's (1999) point is that for an exchange to be dynamic the options available to the

[15] To illustrate Plato's classical definition of knowledge stated that for knowledge to exist it must be true, believed and justified but famously Gettier (1963) challenged the classical definition by providing counter examples to the argument that true justified belief always amounts to knowledge. Needless to say Gettier's counter examples have divided opinion and have been accepted by some and resisted by others. In summary it is hard to disagree with Nagel (2014: 56) who wryly writes that "Trying to get a clear definition of knowledge out of the conflicting ways we intuitively speak of it is like trying to identify the make and model of a car composed of assorted scrap parts.'

[16] I thank an anonymous reviewer for pointing out a problem with the issue of acknowledgement. As he or she correctly notes an acknowledgement can be realised tacitly through the lack of a challenge. And thus the realisation of an increment must be contingent on the lack of future challenge. This is, however, not so surprising when we consider that contexts are constantly being updated and negotiated.

speaker on a real time basis must be both prospected by previous moves and by the longer term discourse history. Two resources for keeping track of a longer term discourse history are increments themselves and spoken information structure. As noted above each initial state is the sum of the previous target states: thus increment boundaries represent locations where interlocutors are able to keep track of shared epistemic rights. Halliday and Greaves (2008), amongst numerous other scholars, state that each tone group contains a tonic syllable. The tonic syllable is the focus of the tone group and presents the lexical item it is contained in as being not recoverable from the context.[17] Hence tonic items present the nub of the propositions for instance in example 14 above GB by choosing not to make *police* tonic signals that the identity of the object of the verb *funded* is Given in the discourse. In other words, the previous cotext has established that in the context of speaking the verb *funded* prospected the police. More generally the target state achieved incorporates the speaker's expectation of which items are already established in the discourse. A fully worked out model which is beyond the scope of this chapter therefore needs to incorporate tonicity choices in order to map how speakers keep track of what is New and what is Given in the discourse.

In the next section, I will examine the suggested model against two short texts: the first a conversation between university acquaintances discussing a recent winter flood in the UK and the second an extract from a televised political debate between rivals. The conversational data presented in Extract A consists of 14 exchanges while the political debate presented in Extract B consists of 5 exchanges. Full details of the data and how they were coded is available in Author (2016 and 2014) respectively.

3 Data and Discussion

In the data below, increment boundaries are indicated by #, bracketed K slots indicate a positioning of a speaker into a knowledge role which was not overtly taken up. On the ideational layer the coding $^{x\ +\ =}$ refer to the tactic relations of enhancing, extending and elaborating (Halliday and Matthiessen 2014: 444). However, here I use this notation in a slightly informal manner to signal semantic and not grammatical relations. The relations are summarised below.

> *Enhancing*: One move expands another by embellishing the previous information: qualifying it with some circumstantial feature of time, place, cause or condition.
> *Extending:* one move expands another by extending beyond the previous information: adding some new element, giving an exception to it, or offering an alternative.
> *Elaborating:* One move expands another by elaborating all or some of the previous information (or some portion of it): restating the information in other words, specifying the information in detail, commenting on the information, or exemplifying it.

EXTRACT A: CONVERSATIONAL DATA

[17] This is not to say that lexical items found in the pre-tonic may not also be presented as New in certain circumstances. Nor does it suggest that the other intonation systems, lexicogrammatical realisation, Thematic positioning and contextual factors are not relevant to a full account of the unfolding of information structure. Nor does it mean that the tonic item is actually New to the discourse only that is presented as such, for full details see Author (2016).

430	EX1			B	A	
431	B:	| I don't like \/concrete either | #	I	↓K1	↑K2f	PaU
432	A:	| uh /no |		↓	↑	PaS$^{=}$
433	……					
434	EX2					
435				A	B	
436	A:	| I read an article in the /Guardian |	I	↓K1	(k2f)	PCU^{+}
437		| I think it was erm /yesterday |		↓	↑	$^{+}$
438		| um –where |				^{x}
439		|they were talking about climate change and \flooding | #			↓	
440	……					
441	EX3			A	B	
442	A	|and –one of the |	I	K1	(K2f)	PCU^{+}
443		|ideas that that was \proposed |				
444		| which was quite /interesting |		↓	↑	$^{=}$
445		| was um the idea of /floating cities |		↓	↑	$^{=}$
446		| which \submerge |			↓	^{x}
447		| when it's really bad /weather | #		↓	↑	^{x}
448	……					
449	EX4			A	B	
450	A	| and –ermm |				
451		|um like it 's got all the –new like |	I	↓K1	(K2f)	PCU
452		| it's \got |				
453		| all the \/new technology and that kind of |		↓	↑	$^{+}$
454		| and –erm |				
455		| sort of assumes that new tech/nology |		↓	↑	$^{+}$
456		| which will help it all to continue to be /developed |		↓	↑	$^{=}$
457		| and that kind of \thing | #			↓	$^{=}$
458	……					
459	EX5			A	B	
460	A	| but I think it is quite an interesting /idea |	I	↓K1	↑	PCU^{+}
461		| to try and cope that kind of /thing |		↓	↑	^{x}
462	B:	|that's really \cool | #	R	↓	↑K2F	PCS $^{+}$
463	……					
464	EX6			B	A	
465	B	| Is it Venice that's \sinking |	I	K2		PU
466	A:	|\ya | \ya| #	R		K1	PC$^{=}$
467	……					
468	EX7			B	A	
469	B:	| they've got those \big |	I	K1		PU
470		|like those like \giant |				$^{+}$
471		| \/airbags |		↓	↑	
472		|that they …				^{x}
473		| /\pump up don't they |		↓	↑	
474		| to like rise the …				^{x}
475	A:	| lift \/houses out of water | #	R	↓	↑K2f	PCS
476	……					

477	EX8			A	B		
478	A	|it's \/ya |	I	K1	(k2f)	PCU	
479		| cause I don't think like /erm |				x	
480		|you \/know |					
481		| as the flooding \/continues |		↓	↑	x	
482		| \assuming that |					
483		| climate change does \exist |			↓	+	
484		| and that /kind of thing |		↓	↑	=	
485		| –Ermm | you know, you're going to \get |			↓	+	
486		| like \sanitation problems |			↓	+	
487		|and that kind of \thing | #			↓	=	
488	…….						
489	EX9			A	B		
490	A	|and it's just going to get more and –more |	I	K1	(K2f)	PaCU+	
491		| difficult to \/deal with | #		↓	↑		
492	…….						
493	EX10			B	A		
494	A	| –Ermm |[18]					
495	B:	|\ermm | it's \almost that yeah |	I	K1		PCU	
496		| we kind of need to \/apply all our technology |		↓	↑	+	
497		| and things like \that |				=	
498		| creating better \buildings |				x	
499		| that can kind of wi \withstand |				=	
500		| a bit more of an \onslaught #						
501	A:	| \ya |	R	↓	↑K2f	=	
502	…….						
503	EX11			B	A		
504	B:	| I guess cause the British climate is \relatively |	I	↓K1		PU+	
505		|sort of \unextreme |					
506		| we kind of got away for however long /building |		↓	↑	+	
507		| pretty /bad buildings |		↓	↑		
508	A:	| \/ya |	R		↓K2f	PCS=	
509	B:	| that cant really \/take flooding and stuff | #	I	↓K1	↑	PCS+	
510	…….						
511	EX12			B	A		
512	B:	| I think like you know you've got the \British obsession |	I	↓K1		PCU+	
513		| with the \/weather as well | #		↓	↑		
514	A	|\hm|	R	↓	K2f	PCS=	
515	…….						
516	EX13			B	A		
517	B:	| when that kind when the \flooding happens you know|	I	K1	(K2f)	PCU	x
518		| even if it's yu in this \case it was you know |					x
519		| quite a lot of /flooding but|		↓	↑		x
520		| even when it's a couple of \centimetres |			↓	x	
521		| in the local town or \something |			↓	x	

[18] I have not coded this filled pause as part of an exchange structure.

| it will be in the news for \<u>weeks</u> | # ↓ +

……

EX14			B	A	
B	| /<u>erm</u> | you \<u>know</u> |	I	K1	K2f	PaU
	|anything to do with the weather /im<u>med</u>iately |		↓	↑	
	|<u>makes</u> the top /<u>news</u> | #		↓	↑	+
A:	| \<u>hum</u> |	R	↓	↑K2f	PaS$^{=}$

……..

The proposed coding is highly effective in showing how the two speakers cooperate to create a seamless conversational interaction. Yet, there is little evidence that either party to the conversation has (i) intended to alter their interlocutor's state of assumptions or (ii) had their own state of assumptions radically altered. This finding is in line with somewhat speculative claims that phylogenetically language emerged as a form of social glue and that the transmission of information is a latter development (Corballis 2017: loc1827).

Of the 14 exchanges, 3 of them, exchanges 1, 9 and 14 do not contain any overt telling. Rather the speakers project their affiliation to a shared way of looking at the world. In this short extract neither speaker produced a disruptive move such as a query or challenge. Textually each exchange consisted of one or two moves with follow up moves neither sought nor provided. Exchange 11 is the one possible counterexample to the canonical sequencing in that A's supporting R move is prior to the completion of B's initiating contribution. However, A's move does not attempt to take the floor or supress B's right to speak; she acknowledges her affiliation with B and his words.

Within each exchange the speakers structure their information as a series of tone groups which extend, enhance and elaborate. Excluding the exchanges which do not contain a falling tone and were coded as affiliative, all of the initiating contributions contain a tone group or groups which extend what was said before. Thus, propositionally, for an initiating move or moves to be successful it would appear necessary that they contain a tone group or groups which move beyond the previous information. Ideationally the R slot is filled by content which elaborates the prior information and goes beyond the prior information except in exchange 5. B's response by not merely agreeing with A's prior turns extends the information by signalling B's emotive response. In exchange 7 the responding move represents a PCS slot on the ideational layer but at the same time unusually in an exchange it completes a telling increment. Functionally the speaker completes the proposition expressed in the initiation and signals his positive affiliation with it.

Interpersonally the speaker's selection of falling tone signals to boost their or decrease their interlocutor's epistemic rights.[19] In no case, does either speaker attempt to lower their

[19] As Table 1 indicates intonation is not the sole means by which epistemic rights are boosted or lowered. But in the data studied here it is the most effective means. With the exception of the opening moves of exchanges 11 and 12 the lexical resources for lowering self or boosting others epistemic rights corresponds with the intonational choices. And as will be seen in Extract B only intonational choices are employed to signal accessibility to epistemic rights. Thus, in my discussion I focus mostly on the intonational projection of epistemic rights,

interlocutor's knowledge claims. On the contrary they frequently lower their own claims in order to boost their interlocutor's claim to knowledge. This once again has the effect of presenting the discourse as one between equals and one where participants do not infringe on their partner's conversational rights. Now that I have illustrated the proposed model in cooperative discourse I will test it in a short example of argumentative discourse.

EXTRACT B: POLITICAL DEBATE

EXA				NC	DC	
NC:	| David \Cameron |	I		K2		PU
	| what would the \cap be|					+
DC:	| well you'd set the \cap |	R		↓	↑K1	PUC+
……						
EXA1						
NC:	| \no |	I [suspend]		↑K2	↓	PU+
	| what's the \number |					=
	| is it /ten |					=
	| is it ten /thousand |					=
	| is it ten /million |					=
DC	(No you set the cap every …)	R	↓	↑K1	PUC	+
	| no If you have a \cap |					=
……						
EXA2						
	I if you want to let me answer the /question |	I suspend]		↑		PUC +
……						
EXA3						
NC:	| just a \number |	I [suspend]		↑K2f	↓	PU =
……						
EXB						
				DC	NC	
DC:	| you're reminding me of Gordon last \week|	I		K1	(K2f)	PCU+
DC	| It's like uh … another \replay | #	I		K1	(K2f)	PCU=
……						
EXC				DC	NC	
DC	|The \fact is |	I		K1	(K2f)	PCU+
	| every \year |					x
	| you need to \talk with |					+
	| the health /authorities |			↓	↑	+
	| the housing \authorities |					+
	| the education \/authorities |			↓	↑	+
	|and \business|					+
	| and set a \cap |					+
	| to \/achieve |			↓	↑	+
	|a very big \/reduction |			↓	↑	+
	| in overall immigration \levels | #				↓	+

EXD				DC	NC	
DC	| That can be /<u>done</u>|	I		↓K1	↑ (K2f)	PCU^{+}
	| we've done it in our \<u>past</u> |				↓	$^{+}$
	| we can do it again in our \<u>fu</u>ture | #				↓	$^{+}$
EXE				DC	NC	
DC	| What's \<u>required</u> |		I	K1	(k2f)	PCU
	| is political \<u>will</u> |					$^{+}$
	| from a party that's prepared to make the \<u>dif</u>ference | #					^{x}

In extract B there are 5 exchanges and as with extract A I will examine them metafunctionally. Four of the exchanges consist of only initiations and the hearer's response if any is not verbalised.[20] Unlike extract A there are no exchanges aimed at projecting affiliation over information transfer. In exchanges B to E the speaker completes a proposition which is unsupported by the other interlocutor. Structurally the speakers build up their propositions by adding facts to the existing knowledge base. In exchange A where both speakers make overt verbal moves, the speaker in the R slot produces a challenge. His response is not prospected by the question. For instance, NC's proposition is *that DC supports a cap on immigration and that the only thing at issue is the number of the cap*, but DC response does not provide an actual number. Indeed, his full response in exchange C is similarly non-compliant. Exchange A consists of NC unsuccessfully requesting DC to provide a number. And while DC produces the prospected response, he does so by seeming to produce an irrelevant proposition. Prima facie he seems to flout Grice's Maxim of Relevance/Relation (1975: 47) but by doing so he actually produces a subtle inference that by asking for a number NC shows himself to be somewhat childish. He repeats the point in exchange B. Exchange A remains unfinished as the embedded suspending exchanges are themselves unresolved and hence it does not realise a movement from an initial state to a target state.

NC and DC frequently attempt to contest their interlocutor's epistemic rights presumably to cast doubt on their political opponent's position. In exchange A, by assuming the K2 role, NC presents himself as a secondary knower and DC as the primary knower. DC takes up the role but his response does not proffer the requested information. Instead his response casts doubt on the sense of NC's question and by so doing NC is presented as having less access to the knowledge resource than might have been expected. NC in the initiating act of the suspending exchanges A1 and A3 challenges DC's assertion and even though he continues to present himself as the secondary knower and DC as the primary knower he contests DC's assessment of their respective access to knowledge and boosts his own epistemic claims while reducing DC's claims. DC's willingness to respond as the K1 knower shows that he regards himself as having primary epistemic rights and his contradiction signals his assessment that NC has little or no access to the required knowledge. His second initiating move in A2, however, contains a rising tone which signals that he wishes to boost NC's epistemic rights. But crucially these

[20] The limited number of overt responses is likely to be the result of the strict and pre-agreed rules of the political debate as well as the vigilant policing of the moderator. Thus, as we will see non-preferred or disruptive behaviour occurs on the other two layers.

rights do not concern the proposition *of whether or not it is possible to assign a definite number to the proposed immigration cap* but rather to the norms of polite conversational behaviour. NC is presented as knowing that polite conversationalists do not interrupt before they have been answered and hence DC implies that NC's boorish behaviour is not what would be expected.

Exchange C functions as DC's answer to NC's questions in Exchange A. DC presents himself as the primary knower and assigns the K2f slot to NC. Four of the tone groups in the exchange contain rising or fall-rising tone and hence signal DC's uncertainty and conversely boost NC's epistemic rights. While this may seem somewhat odd in an exchange where DC is expected to provide information, it is in fact a clever means of impinging on NC's political face. He is presented as having knowledge that in deciding on an immigration cap, relevant authorities would need to be contacted. In other words, lowering or boosting an interlocutor's epistemic rights is a double-edged sword which may be used to support or infringe on an interlocutor's face.

4 Conclusion

Consideration of the two extracts has shown us that a three-metafunctional coding of exchange structure is able to reveal how prior moves prospect and constrain following moves. We have seen that in cooperative dialogues there may be no transfer of knowledge but rather speakers may signal their affiliation and shared social understanding and have suggested that this may indicate that the origin of language functioned as social glue and not to transmit information. This is a point worth developing. Structurally we have seen that each completed exchange contains an increment though there is no requirement for a falling tone in affiliative exchanges. Additionally to complete an exchange, one of the moves must extend beyond the previous knowledge base. Yet, while this provides a dynamic representation of the discourse there has yet been no overt account of how speakers' keep track of the discourse history and of how they raise and lower their own and their interlocutor's claim to access knowledge within and between exchanges. This is where increments come into their own as a powerful device for keeping track of the previous discourse choices. Every initial state is not produced in a vacuum but rather builds upon the sum of the previous target states realised in the discourse. Furthermore each achieved target state represents a contingent point in the discourse which incorporates the speaker's expectation of which items are already established in the discourse. This enables the speakers to keep track not only of the immediately prior move/exchange but of the entire discourse history and assists them in knowing what future moves are possible. For instance, in exchange C the initial state prior to DC's talk contains the following information: *DC has proposed a cap on immigration and that NC regards this as inappropriate as it is impossible to quantify a cap*. Hence DC's contribution in exchanges C to E modify this existing initial state and further contributions are constrained and prospected by DC's contributions.

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