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Relevance Theory and Language Change

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Abstract

This paper considers how ideas developed within relevance theory can be applied in accounting for language change. It briefly surveys previous relevance-theoretic work on language change and suggests that studies of procedural meaning, lexical pragmatics and metarepresentation can each play an important role in accounting for semantic change. It identifies a number of areas for further research which could help to develop understanding of both relevance theory and language change and suggests that one important line of further research would be to explore connections between work in relevance theory and approaches which adopt terms and ideas from the theory without adopting the relevance-theoretic framework overall.

Keywords: relevance, language change, procedural meaning, lexical pragmatics,
metarepresentation

1. Introduction

This paper is mainly motivated by the assumption that ideas from relevance theory could be more extensively and more usefully applied in work on language change. A second motivation, not developed here, is the thought that it would be useful to explore more fully possible connections between relevance-theoretic and other approaches to language and communication in general and to language change in particular.

While a significant number of approaches see a key role for pragmatics in accounting for semantic change (for discussion, see Traugott 2012), there has been little work in this area from the perspective of relevance theory. Traugott (2012: 550) cites only four examples: Groefsema 1995, Koch 2004, Nicolle 1998b, Papafragou 2000. While a small number of other works discuss change from a more or less relevance-theoretic point of view (see, for example, Breul 2007; De Mulder 2008; LaPolla 2003, 2015; Nicolle and Clark 1998; Padilla Cruz 2003, 2005; Ruíz Moneva 1997; Schulte 2003; Žegarac 1998), and discussion of change often arises naturally when considering the meanings of particular expressions, Traugott is right to suggest that very little work focuses on change directly or mainly from a relevance-theoretic perspective. The extensive online relevance theory bibliography managed by Francisco Yus (<http://personal.ua.es/francisco.yus/rt.html>) has no heading for work on language change and lists very few sources which focus on change.

This paper discusses some of the ways in which ideas from relevance theory can play a role in accounts of change. Section two briefly discusses examples of relevance-theoretic work in this area, indicating some ways in which these differ from work in other (mainly neo-Gricean) approaches. Section three suggests that three ideas from relevance theory can play a key role in accounts of change: the distinction between conceptual and procedural meaning, work on lexical pragmatics, and the notion of metarepresentation. The conceptual-

procedural distinction, developed mainly in the work of Diane Blakemore (1987, 2002, 2007), has already been applied in work on language change by relevance theorists and, with some modifications, by others (e.g. Hansen 2008, 2012; Traugott and Dasher 2002). Partly in the light of recent suggestions about procedural meaning (particularly as discussed by Wilson 2011), this section suggests new ways of thinking about three key points made in Nicolle's influential (1998b) paper. One possibility discussed here is a move closer to the assumption made by Traugott and others (e.g. Traugott and Dasher 2002, Traugott and Trousdale 2013) that the development of encoded procedural meaning ('proceduralisation') is gradual rather than instant. This question depends to some extent, of course, on whether the discussion is focusing on change for an individual (which Nicolle claims is instantaneous) or for a community (which Nicolle claims is gradual). Relevance-theoretic work on lexical pragmatics (e.g. Sperber and Wilson 1998, Carston 2002, Wilson and Carston 2007) has been applied very little if at all (I am aware only of passing mentions) in accounts of language change. This work also has important implications for studies of language change, suggesting a particular perspective on the view that change is constant and that regularisation and conventionalisation (rather than the 'initiation' of change) are key things to focus on in accounts of change. The section also considers the role which metarepresentation plays in language change. While this follows partly from its key role in the relevance-theoretic notion of ostensive-inferential communication, metarepresentation also plays a specific role in the development of some new meanings. Section four indicates some directions for future research and concludes that there is scope for a much broader range of work on language change from a relevance-theoretic perspective.

2. Previous relevance-theoretic work

This section briefly describes some previous relevance-theoretic work on change. It begins by considering two areas of focus in non-relevance-theoretic approaches and considers what relevance-theoretic assumptions suggest about them.

2.1 'Bridging contexts' and stages of conventionalisation

Traugott (2012) identifies a range of work which explores the role pragmatics can play in accounts of language change. This includes studies of 'bridging contexts' (Diewald 2002, Evans and Wilkins 2000, Enfield 2003, Heine 2002), Horn's (1984, 1989) and Levinson's (1995, 2000) application of their respective neo-Gricean principles in considering conventionalisation, and Traugott and Dasher's (2002) Invited Inferencing Theory of Semantic Change (based to some extent on Horn's and Levinson's work). The Invited Inferencing Theory of Semantic Change is based on the assumption that certain inferences are 'invited' by utterances in certain contexts and that this can lead to conventionalisation. One well-known example (discussed by Traugott and Dasher 2002: 36-38) is the development of a conditional sense for the expression *as long as* from earlier spatial and temporal senses.

Bridging contexts are ones where an utterance can be understood by listeners as having either an innovative meaning or an earlier one. The innovative meaning may be 'preferred' in many contexts but is still cancellable and not yet conventionalised. Bridging contexts occur when an expression gives rise to the same or a similar pragmatic implicature often enough that the content of that implicature becomes regularly associated with the expression. Eventually, it may become hard to 'cancel' the implicature and so it is no longer clear that the implicature (or its activation) is not part of the encoded meaning. At this stage,

the original encoded meaning might persist or it might, more or less quickly, cease to be associated with the expression, at which point the new meaning is conventionalised.

Traugott (2012: 550-551) mentions as an example the English word *since*, which developed from *sith* (as discussed by Geis and Zwicky 1971). This word originally had a temporal sense ('late' or 'after') and later developed a causal sense alongside the temporal sense.

This contrasts with *after* which, as Traugott and König (1991) point out, 'though associated with causal implicatures in relevant contexts, has never become semantically polysemous' (Traugott 2012: 551).¹

While the notion of bridging contexts in this sense is consistent with relevance-theoretic assumptions, there is, of course, room to debate exactly how the process unfolds, and there has been some discussion of this. Nicolle (2011: 403-405) argues that bridging contexts are not an inevitable or necessary feature of grammaticalisation. Groefsema (1992), while not focusing on questions of language change explicitly, discusses the notion of a 'short-circuited implicature' as suggested by Morgan (1978; see also Searle 1975; Bach and Harnish 1979), and points out some problems with this notion, before developing an alternative semantic and pragmatic account of *can* and its use in expressions such as *can you pass the salt?* Building on Groefsema's discussion, Žegarac (1998) considers problems with the notion of a 'short-circuited implicature' and suggests an alternative explanation for the development of standardised and conventionalised meanings. He suggests that expressions may become associated not with implicatures but with contextual assumptions. When an expression is regularly used in particular contexts, the relevant contextual assumptions might be regularly accessed when this expression occurs. When this happens and the expression retains its original linguistically encoded meaning(s), a process of standardisation is taken to have occurred. Conventionalisation occurs when the original

linguistically encoded meaning is no longer associated with the expression. Clearly, this process resembles what Heine (2002) and Diewald (2002) have in mind when they discuss 'bridging' contexts. Nicolle and Clark (1998) consider Žegarac's proposal and suggest that this can be understood as a form of 'proceduralisation' (the development of an encoded procedural meaning). On this view, conventionalisation has occurred when the activation of a particular procedure is linguistically encoded by an expression.

Traugott also discusses more specific questions about how conventionalisation occurs, in particular the question of whether the move from particularised conversational implicatures (dependent on specific contexts) to conventionalised meanings involves an intermediate stage where expressions are associated with generalised conversational implicatures (which are generally communicated by use of these expressions unless specific linguistic or contextual features 'block' them). While Traugott and Dasher (2002: 35) argue that generalised invited inferences do sometimes play a role, Hansen and Waltereit (2006; see also, Hansen 2008) argue against the view that conventionalisation involves an intermediate 'generalised' stage (although generalised conversational implicatures do play a role in their model).

The question of whether conventionalisation involves an intermediate 'generalised conversational implicature' stage does not arise for relevance theory since it does not assume a category of generalised conversational implicatures. However, conventionalisation might still be seen as occurring in stages since, as Traugott (2012: 554-555) points out, there is good evidence that at least some language change involves the regularisation of previously context-dependent and context-specific inferential conclusions and, in some cases, these become conventionally associated with linguistic forms. We might, for example,

follow the suggestion that standardisation is a step towards conventionalisation without presupposing a category of generalised conversational implicatures.

2.2 Relevance-theoretic work on language change

As mentioned above, there has been some but not very much work on language change from a relevance-theoretic perspective. Groefsema (1995) discusses the development of meanings of the English modals *can*, *may*, *must* and *should*, in presenting her proposal that each of these has a non-polysemous unitary meaning. Papafragou (2000: 145-149) also includes semantic change in her discussion of modality. Like Groefsema, she argues for a unitary semantic analysis of the modals *can*, *may*, *must* and *should* and she also develops a similar analysis for the expression *ought to*. She considers a range of views on the development of the modals and proposes a modified version of the 'semantic bleaching' hypothesis which sees reduction and possible loss of semantic content as playing a key role (Bybee and Pagliuca 1985, Bybee et al 1994). Papafragou also suggests a metarepresentational analysis of epistemic modality, where what the modal encodes has changed from something which contributes to an explicature to one where it contributes to a 'higher-level explicature' of the utterance.

Koch (2004) applies ideas from relevance theory in discussing metonymy, considering a variety of types of metonymy, diachronic developments and the theory-internal question of whether particular metonymic interpretations should be understood as involving explicatures (developments of linguistically encoded semantic representations, related to the Gricean notion of 'what is said') or implicatures (indirectly communicated assumptions derived through the interaction of explicatures with contextual assumptions). Nicolle (1997) discusses the development of a future sense for *be going to* from a relevance-theoretic

perspective, a discussion which feeds into his later (1998b) paper on grammaticalisation (discussed in section three below).

There has been some other work on change from a relevance-theoretic point of view. LaPolla's (2003; see also LaPolla 2015) work on language variation and change departs from some assumptions of relevance theory (but shares others). He argues against the assumption that there is linguistically encoded meaning and against a distinction between conceptual and procedural meaning (LaPolla uses the term 'information' here, a term not generally used in recent work on relevance theory since the claim is not that expressions encode information but that they activate procedures). He suggests that 'there is no innate language structure, and no deterministic coding-decoding process, as all aspects of interpretation involve inference' and that 'the role of all aspects of language use in communication is to constrain the inferential process' (LaPolla 2003: 119). In fact, the rejection of a notion of linguistically encoded meaning only follows from LaPolla's other two assumptions if they are seen as inconsistent with a view that linguistic expressions encode (i.e. automatically 'activate') procedures which constrain interpretations. They depend on LaPolla's view that linguistic conventions are 'conventions and habits . . . no different in nature from other types of conventions and habits that have developed in the society for performing particular actions, such as the conventions in the U.S. of eating with a fork, or of men wearing ties on formal occasions, or of driving on the right-hand side of the road' (LaPolla 2003: 120). While LaPolla's view that all language use constrains inference might seem similar to more recent views on procedural meaning (discussed in section 3 below), his assumptions about the nature of linguistic conventions are sharply distinct from relevance-theoretic assumptions about linguistically encoded meanings.

Ruíz Moneva (1997) applies relevance-theoretic ideas in exploring Scandinavian influences during the Old and (mainly) Middle English periods, suggesting that a key focus in accounting for these is how particular expressions contribute to the balance between cognitive effects and the processing effort involved in deriving them. Padilla Cruz (2003) proposes that the notion of procedural meaning can play a role in accounting for the introduction of Scandinavian pronouns to English. He suggests that loss of inflections in Old English meant a loss in encoded procedural meaning and that the new forms helped to constrain the recovery of explicatures. Padilla Cruz (2005) builds on this work in discussing changes in the preterite verb form from Old to Middle English. A central idea is that changes in what is encoded by particular forms lead to changes in the amount of processing effort involved in fleshing out encoded meanings to recover explicatures and implicatures. He suggests that new forms emerged to make adjustments to the amount of processing effort involved, i.e. to provide more guidance when other linguistic indicators began to disappear. He also makes intriguing suggestions about the possible contextual effects which various forms give rise to, including weak implicatures about identity and identification with particular groups of language users.

Given that a key aim of relevance theory is to contribute to explanations of how language is produced and understood in specific contexts, it is surprising how little relevance-theoretic work has focused on change. The next section considers how three ideas from relevance theory in particular can be useful here.

3. Procedures, Lexical Pragmatics and Metarepresentation

This section considers three ideas from relevance theory which can play a significant role in accounting for language change. The first, the distinction between conceptual and

procedural meaning, has been applied in discussions of language change. Ideas on lexical pragmatics and metarepresentation, by contrast, have not been discussed much in this context.

3.1 Procedural meaning

Diane Blakemore's work on the distinction between conceptual and procedural meaning (Blakemore 1987, 2002, 2007) has been extremely influential and recognised as one of the most important ideas developed within relevance theory. It has been much discussed by relevance theorists (see, for example, Wilson and Sperber 1993; Escandell-Vidal, Leonetti and Ahern 2011) and by others (e.g. Hansen 1998, 2008; Traugott and Dasher 2002; Traugott and Trousdale 2013). One of the most influential discussions is by Nicolle (1998b), who considered the relevance of procedural meaning to accounts of grammaticalisation, where change results in an expression developing a grammatical role, i.e. a change in function rather than (only) in meaning (for work on specific changes, see Nicolle 1997, 1998a, 2007; for more recent discussion, see Nicolle 2011). He suggested that many cases of grammaticalisation could be seen within the relevance-theoretic framework as cases where new procedural meanings are developed. One example Nicolle has discussed is the development of a future sense in English for the expression *be going to*.

Not all proceduralisation counts as grammaticalisation, of course. The expression *well*, for example, is not usually taken to be a grammatical marker in its 'discourse marker' sense, although it is assumed within relevance theory to have a procedural meaning. Nicolle made three specific claims: that grammaticalisation seen as proceduralisation must be instantaneous; that a key driver of grammaticalisation is the development of a procedural meaning alongside conceptual meaning (although he does not claim that any one factor is

sufficient on its own to cause grammaticalisation); and that the conceptual-procedural distinction suggests an adequate account of semantic retention (where a grammaticalised form retains its previous meaning alongside its new role).

Alongside other evidence, Nicolle reasons that proceduralisation cannot be gradual on the basis that this would presuppose the possibility of there being a kind of meaning which is intermediate between conceptual and procedural meaning. He suggests that '...characterisation of grammaticalisation as both formally and semantically gradual is incompatible with the notion of a strict distinction between conceptual and procedural information types' (Nicolle 1998b: 7). As mentioned above, more recent work would not refer to 'information types' here, but Nicolle's claim is clear, namely that there cannot be any position intermediate between conceptual and procedural encoding. An expression must either activate a procedure or not. In fact, Nicolle ties this to some of the central ideas in relevance theory about the general aim of maximising relevance in cognition (generally seeking as many effects as possible for as little effort as possible) and about optimising it in communication (assuming that what is communicated will justify the effort involved in recovering it). Making a connection with Swinney's (1979) work on lexical access during utterance interpretation, he suggests that:

... in the case of a formally lexical expression used functionally/semantically as a gram², the newly encoded procedural information is automatically recovered each time the expression is processed, since it provides an effort-reducing processing constraint on the interpretation of the associated clause. If the resulting interpretation achieves adequate contextual effects on its own, the interpretation

process should cease . . . (since recovering and inferentially enriching the conceptual information also encoded would increase processing effort and thereby reduce relevance).

(Nicolle 1998b: 10)

Nicolle, then, follows Givón (1991) in suggesting that the gradualness of a formal change need not coincide with gradual semantic change. As Nicolle puts it:

A gram part way along the (formal) grammaticalisation cline cannot be said to be semantically intermediate between lexical and grammatical if there is no information type between the conceptual and procedural.

(Nicolle 1998b: 14)

On the question of what initiates grammaticalisation, Nicolle suggests that what 'counts as' proceduralisation is 'the addition of procedural information to the semantics of an expression, alongside the conceptual information already encoded' (Nicolle 1998b: 16). After considering other possibilities, he concludes that the key mechanism for proceduralisation is 'the conventionalisation of invited inferences' (Nicolle 1998b: 23), i.e. a version of the notion discussed in the work of Traugott and Dasher (2002) and others that recurrence of the same or similar inferential processes can lead to a particular procedure being conventionally associated with an expression.

A key assumption in Nicolle's account of semantic retention is that the previously encoded conceptual meanings of newly proceduralised expressions do not become completely redundant right away. They continue to be encoded and so activated but need

not be actually deployed in interpretation processes, since the procedure which is activated might lead to a relevant interpretation without the need to use the encoded conceptual content. When this is the case, 'semantic retention' has occurred, i.e. a new encoded (procedural) meaning exists alongside an earlier (conceptual) one. Eventually, the earlier encoded meaning might be employed so seldom that its association with the particular expression fades away.

While Nicolle's approach is very successful in working out accounts of these three topics within a relevance-theoretic framework, more recent thinking on procedural meaning suggests some changes to this account.

Wilson (2011) surveys the 'past, present and future' of work on procedural meaning, identifying key aspects of how it can contribute to accounts of language acquisition and development, making important suggestions about the nature of procedural meaning and considering possible directions for future work. In responding to Bezuidenhout's (2004) suggestion that procedural meaning should not be seen as an aspect of linguistic semantics since procedures are part of linguistic performance rather than linguistic competence, Wilson points out that there is a distinction 'between *what* is encoded . . . and the nature of the encoding relation itself' (Wilson 2011: 9). Neither procedures nor conceptual representations are part of semantic competence but they are properly seen as what is encoded by linguistic expressions. She suggests that procedural meaning can be understood as establishing semantic correspondences between linguistic expressions and 'states of the user'. On this view, procedural expressions:

... put the user of the language into a state in which some of these
domain-specific cognitive procedures are highly activated (and hence

more likely to be selected by a hearer using the relevance-theoretic comprehension heuristic).

(Wilson 2011: 11)

She also suggests that the range of kinds of procedures which can be activated is wider than had originally been thought, proposing that:

... although procedural expressions do indeed guide the comprehension process in one direction or another, this is not always their *raison d'être*. Some procedural expressions appear to be linked to capacities which are not intrinsically linked to comprehension, including mindreading, emotion reading, social cognition, parsing, and epistemic vigilance. On this account, what all procedural expressions have in common is not necessarily their cognitive function, but only their triggering role.

(Wilson 2011: 26)

Wilson makes two further suggestions which seem particularly relevant for work on language change. First, she considers the possibility (without arguing for it explicitly) that we might see conceptual expressions as more similar to procedural expressions than has been previously assumed. On this view, conceptual expressions encode concepts which are automatically activated though not necessarily deployed when a particular expression is encountered. Activating the concept gives access to potential cognitive effects and the communicated concept will be broader or narrower than the encoded concept depending on which effects it

carries. Each time such an expression is encountered, a process is activated of constructing a conceptual representation appropriate for the current inferential task, constrained as usual by the relevance-guided comprehension heuristic at the heart of the theory. This is a development of the idea in Sperber and Wilson (1998) that all words behave as if they encode 'pro-concepts' (as encoded by words like *my*, *near* etc., which are semantically incomplete and which require contextual completion before a specific concept is entertained). Second, she considers the possibility that a procedural element may be associated with all linguistic expressions. On this view, she says, we might end up by assuming that there are three types of expression. All expressions would be seen as encoding procedures. Some would encode procedures of the type developed in Blakemore's work and no conceptual content. Some expressions would encode conceptual content and procedures involved in the derivation of ad hoc concepts from the encoded content. Some expressions with conceptual content would also encode procedures not associated with the adjustment of conceptual content.

Nicolle's conclusion that proceduralisation is instantaneous must be right if we assume both that this involves a semantic change for a particular expression from a situation where it does not activate a procedure to a situation where it does and that the nature of procedural encoding means that the procedure is automatically activated on each occasion of use. However, the distinction between conceptual and procedural expressions is not an 'either/or' phenomenon if we assume that expressions with conceptual content also activate procedures. If so, then proceduralisation must involve either the addition of a new procedure alongside an existing one or the replacement of an earlier procedure with a different one (two expressions which have developed new procedural meanings are the Japanese connectives *dakara* and *sorede*; for discussion, see Sasamoto 2008, who suggests that they

activate procedures leading to higher-level explicatures about the status of utterances as representations of other thoughts). There would not be cases where an expression which does not activate a procedure becomes one which does.

There are other reasons for possibly rethinking Nicolle's view of proceduralisation as instantaneous, which have to do with how much of an idealisation we are making when we think of an expression activating a new procedure. Nicolle takes account of one aspect of this when he proposes a distinction between initial activation for one or more individuals and 'actualisation' as it spreads through a population:

What is gradual ... is actualisation: the spread of a newly grammaticalised form through the grammatical system of the language and through the community of speakers of the language.

(Nicolle 2011: 407)

However, we might also question the notion that association with a procedure happens instantly for an individual. Suppose a procedure is activated on one occasion when I encounter a particular expression and then it happens again. Has proceduralisation occurred 'instantaneously'? What if the procedure is not activated the next time I encounter the expression (maybe because activating that procedure led nowhere in terms of the interpretation of the specific utterance I have just attempted to understand)? It is at least arguable that proceduralisation can begin as a relatively spontaneous incidental phenomenon which consolidates more or less rapidly before or alongside its spread to other users. If so, then proceduralisation can be more or less developed for any particular individual and so procedures can be seen as more or less fully associated with particular

expressions. If so, then there is in fact no relevance-theoretic motivation for arguing that proceduralisation is instantaneous, unless we understand that term loosely (which, of course, still suggests the possibility of proceduralisation being more or less instantaneous). In fact, we could interpret the ideas on standardisation and conventionalisation in Žegarac's (1998) and Nicolle and Clark's (1998) work in this way, i.e. we could treat standardisation as having taken place as soon as a procedure has begun to be associated with an expression and conventionalisation as having taken place when the association has become more stable. On this view, then, proceduralisation would be seen as a matter of degree. While there is a sharp distinction between conceptual and procedural meaning, there is a less sharp distinction between conceptual and procedural expressions and so it is possible to see proceduralisation as more gradual than assumed by Nicolle. Pursuing this line would mean that the relevance-theoretic approach could be seen as falling into line more fully with the approach of Traugott and others (e.g. Traugott and Dasher 2002, Traugott and Trousdale 2013).

The ideas discussed by Wilson also suggest changes to the account of what initiates the development of procedural meanings. If all expressions activate procedures, then a significant distinction would be between expressions which only activate procedures and those which also have some conceptual content (and a procedure for adjusting it, as discussed more fully in the next subsection). Proceduralisation would then be about either the loss of conceptual content (so that 'deconceptualisation' would be a better term) or about the development of a new procedure beyond that of accessing and adjusting conceptual content, possibly alongside or instead of existing non-conceptual procedures. Nicolle's account (based on the development of new procedures) would still have a role to play in the development of new procedures. At the same time, the loss of conceptual content would

require an account of how conceptual meanings which are seldom used become weaker and may ultimately fade away (perhaps across generations). Arguably, then, the focus in developing explanations should be more on how particular meanings sometimes become regularised and relatively stable than on how they change (which can be seen as the norm for all kinds of linguistic meaning).

For Nicolle, the phenomenon of semantic retention was seen as perfectly natural since proceduralisation was seen as the development of a procedural meaning alongside an existing conceptual meaning. Retention would last as long as the encoded conceptual content continues to be accessed. If we adopt the ideas suggested above, proceduralisation involves development of a new procedure not previously associated with an expression, which must, of course, be developing alongside a previously existing procedural meaning. If this occurs for an expression with no conceptual content, then this would be a case of changing procedural meaning rather than developing procedural meaning and this would not fall within the domain of changes discussed by Nicolle. For an expression with conceptual content, either its only associated procedures are to access and modify conceptual content or it has both this kind of procedural meaning and other associated procedures. In the latter case, proceduralisation would mean developing non-concept-related procedures alongside other non-concept-related procedures; this would then be another case of changing procedural meaning and so not a kind of change discussed by Nicolle. The case relevant to Nicolle's discussion would occur where an expression which previously only activated a procedure related to ad hoc concept construction develops a different procedure alongside that one. Of course, it is natural then that semantic retention should occur, since the original conceptual content will still be present at this stage (one example of retention, discussed by Nicolle 1998a, occurs when uses of *be going to* in English convey a sense such as 'prior

intention' or 'current activity leading to a future event' alongside future time reference).

Nicolle suggests that retention occurs when conceptual content is activated but not used.

The key thing to be explained is how failure to use an encoded conceptual meaning leads ultimately to this conceptual content no longer being activated by an expression.

To illustrate some of the ideas discussed above, here are some thoughts on how we might begin to explain developments in the use of hashtags (the marker # plus the characters immediately following it, originating as an explicit topic marker on twitter and now developing new uses within and outside tweets) in terms of the notion of procedural meaning. Caleffi (2015) and Scott (2015) discuss the development of these and present a wide range of examples. Scott considers a range of ways in which the marker # contributes to interpretations and suggests that these might be understood as developing procedural meanings. She provides examples where hashtagged material contributes to understanding of the proposition expressed by a tweet (1a), to higher-level explicatures (1b) and to implicatures (1c):

- (1) a. She's done it! #davina #windermere
- b. One week from today I can start throwing again #finally
- c. I feel like I am falling over on the inside #winehangover

(adapted from Scott 2015: 15-17)

In (1a) (simplified here) the hashtagged material helps the reader (along with appropriate contextual assumptions) to infer that *she* refers to the presenter Davina McCall and that what she has done is to swim across Lake Windermere for charity. In (1b) the hashtag indicates something about the attitude of the tweeter to the proposition expressed. In (1c) it

indicates an implicated premise (that the tweeter has a hangover caused by wine drinking) which helps in deriving implicatures.

In Nicolle's (1998b) account, these forms of inference would presumably count as new procedures. However, it is hard to see how (or when) we could claim that they have been instantaneously associated with the marker. Their development has surely been facilitated by inferences which might have been made when the marker was being used in its early stages as a topic marker or search tool. Whenever anyone communicates with us, they provide evidence for inferences about them. These conclusions would count as non-communicated implications or weak implicatures. Of course, these are not encoded meanings. The new uses encourage different kinds of inferential processing which might eventually become conventionalised. At this stage, we might say that they have only so far been standardised in the sense discussed above.

3.2 Lexical pragmatics

A standard assumption in work on linguistic semantics is that conceptual expressions contribute conceptual content to the meanings of utterances. Communicators select words which encode concepts they wish to express and interpreters then access concepts encoded by the words. This was also the assumption in early relevance-theoretic work. The word *mug* would be seen as encoding the concept MUG, the word *tea* the concept TEA, and so on. Both of these words are ambiguous (or at least polysemous), of course, so inference is involved in identifying which sense is intended on a given occasion. Hearers need to infer whether the particular intended sense for *mug* is a 'container for tea', a 'foolish person', a 'face', etc. and whether the intended sense for *tea* is a hot drink, a plant, leaves, tea bags, an afternoon or evening meal (implausible in this context), etc. Understanding the

contribution of particular conceptual expressions to larger expressions means accessing the particular concepts and adding them to conceptual representations being constructed as part of the interpretation process. When we hear an utterance such as (2), we slot the encoded concepts (disambiguated as appropriate) into semantic representations such as (3). The semantic representation in (3) is of course a simplified one, including in that I have assumed a particular sense for ambiguous terms. Material which has to be inferred is presented within square brackets:

- (2) John made me a mug of tea.
- (3) [someone is expressing the proposition that] [the referent of *John*] made a mug of tea for [the referent of *me*] [at some time before the time of utterance]

Sperber and Wilson (1998) discuss a wider range of kinds of inference involved in understanding the contribution of conceptual expressions to utterances and suggest, as mentioned above, that all words behave as if they encode 'pro-concepts' (these are encoded by words such as *my*, *near*, *etc.*, which are semantically incomplete and require inferential completion before a full-fledged concept is entertained). They discuss cases of polysemy, such as the word *open* which has a different sense in a phrase such as *open the bottle* than when it is used in a phrase such as *open the washing machine*. The particular concept OPEN which a hearer is likely to construct when asked to open a bottle is different from when they are asked to open a washing machine and surely inference is involved in constructing the particular concept each time.

The idea that understanding conceptual expressions regularly involves inference has been developed in a series of works (see, for example, Carston 1997, 2002; Sperber and Wilson 1998; Wilson and Carston 2007). In common with a range of linguists, philosophers and psychologists, relevance theorists have been influenced by the work of Lawrence Barsalou (1987, 1993) on the development and adjustment of 'ad hoc concepts' during cognitive processing. Based on this work, relevance theorists have proposed that understanding words which encode conceptual meanings regularly involves inferential adjustment.³ The concepts we develop from hearing the word *flat* will be different for each of the following utterances:

- (4) a. I like cycling in Belgium because it's flat.
- b. I need a flat surface for chopping this veg.
- c. I hate playing at Easter Road. The pitch isn't flat.

Even if the concept encoded by the word *flat* is 'the same' in each usage here (we might debate the details of this, of course), we do not access and use 'the same' concept each time. The kinds of flatness which would be relevant for Belgium, a kitchen surface and a football pitch in these utterances are quite different. Carston, in particular, has discussed a wide range of cases where the concept accessed and used on a specific occasion is not the one we are most likely to think of if someone asks us what a particular word means. Here are some of Carston's examples:

- (5) a. There is a rectangle of lawn at the back.
- b. I want to meet some bachelors.

c. He was upset but he wasn't upset.

In (5a), the lawn does not have to be strictly rectangular for us to judge the utterance as true. We could say that a 'broader' concept than the standard one is used here (since it includes shapes which are not strictly rectangular). If (5b) is uttered by a single heterosexual woman who has moved to a new town, the bachelors she is hoping to meet are likely to be of a specific type (not any so far unmarried man will do). Here we could say that the concept is 'narrowed' (since not all unmarried men would count as ones she would like to meet). (5c) demonstrates use of the same expression twice in close proximity with different senses. It was uttered by a witness (called Kato) in the murder trial of O.J. Simpson to indicate that, at a certain time, Kato felt that Simpson was 'upset' in one sense (in an emotional state) but not another (one extreme enough to suggest that he might commit murder).

(6) is another frequently discussed example (see, for example, Wilson and Carston 2006) which demonstrates that concepts can be simultaneously narrowed and broadened in some cases:

(6) Caroline is a princess.

If the referent of *Caroline* is not a member of a royal family, then the communicated meaning of 'princess' is broadened to include non-royal people. At the same time, the hearer is likely to assume that Caroline has properties not shared by all princesses (being spoiled, selfish, etc.) so that the communicated meaning is simultaneously narrowed. Clearly, the accounts of narrowing and broadening discussed here could play a role in accounting for the kinds of semantic restriction or widening often discussed in historical linguistics.

Relevance theorists have also discussed properties of conceptual representations which ‘emerge’ during interpretation.

(7) That surgeon is a butcher.

In this example, we infer some properties of the referent of *that surgeon* which are not generally shared either by surgeons or by butchers, e.g. that the surgeon is ‘extremely incompetent, not to be trusted with the lives of patients, and so on’ (Wilson and Carston 2006: 415).

So this approach sees inferential ‘adjustment’ (or ‘construction’) as a regular feature of understanding conceptual expressions. As well as adjusting the specific representation for the specific inferential comprehension task, these inferences sometimes involve narrowing down the range of the encoded concept, sometimes broadening the range of the concept, sometimes both, and sometimes the ‘emergence’ of properties which are not generally assumed to be features of the concept.

There is ongoing discussion of the details of how lexical pragmatic processes work. For example, not all theorists now assume that ‘the same’ concept is accessed at the start of processing. It has been suggested, for example, that conceptual expressions ‘point’ to something looser than a stable conceptual entity, given that inference is involved in determining the communicated concepts on every occasion of use (see, for example, Carston 2012). One consequence of this would be that accessing and producing or understanding conceptual expressions would resemble understanding of procedural expressions more closely than had been previously assumed. For the purposes of this

paper, the key thing to notice is that lexical meanings are not stable but constantly varying on each occasion of use.

Awareness of the extent to which inference is regularly involved in recovering intended conceptual meanings is clearly connected to (arguably has led to) the line of reasoning that results in the idea that all linguistic expressions encode procedures.

So what does this suggest about language change? First, it suggests a sense in which change is ever-present and so the phenomenon to be considered here is the regularisation of some kinds of meanings against a backdrop of ongoing change. One way to think about this is to consider what might be happening in what seems to be a straightforward case of semantic change. Consider, for example, the change in meaning of the expression *long*, which has developed a general negative meaning for some speakers of British English, as illustrated in this exchange:

- (8) A: My best friend just insulted me
 B: That is long!

A traditional view might say that a hearer unaware of this sense will, as usual, activate all encoded meanings and make inferences to select a sense for any ambiguous expressions. *Long* is a polysemous expression with at least two senses, roughly amounting to 'of significant length' or 'of significant duration', neither of which will lead to an adequate interpretation here (since it is not clear what the speaker could be saying is of significant length or duration). The hearer will have to rethink what the word must mean here, perhaps making a guess, or perhaps giving up quickly and asking for clarification. In some cases, though, a particular usage will be consistent with either the earlier or the more recent sense:

(9) A: I've got a five thousand word essay to write tonight.

B: That's long!

(10) A: The nearest shops are ten miles away.

B: That's long!

Cases like this might also have been involved in developing the new sense, since the hearer (A) in each case might make generally negative inferences about the suggested length or duration.

On the current relevance-theoretic approach, we make inferences every time we encounter an expression with conceptual content. Rather than simply accessing one conceptual representation, or selecting from a fixed set, we begin by making inferences, adjusting the conceptual content in ways which are constrained by the relevance-guided comprehension heuristic, until we either find an adequate interpretation or give up.

This means that there is not a distinction between cases where inference is required and cases where it is not. Inference is always required and there is a continuum from cases where inferential processing leads quite quickly to an acceptable interpretation to those where this takes longer or does not happen. Rather than initiating an inferential effort to find an appropriate sense for *long* only when the initial conceptual access process fails, the hearer begins by making inferences and the key thing in this case is that an appropriate interpretation is not found quickly. Whether or not we choose to use the term 'procedural meaning' to refer to the inferential processes triggered when we encounter a conceptual expression, the procedure of inferring specific conceptual representations takes place every

time, alongside other procedures including memory retrieval and other processes of utterance interpretation.

On this view, then, change is constant and key processes to focus on in developing accounts of change are processes of regularisation and stabilisation of encoded meanings. This view is shared by constructional approaches (e.g. Traugott and Trousdale 2013; Petré 2014) who see regularisation and stabilisation of meaning-form pairings (constructions) as key in accounting for language change. More radically, we might say that the notion of the 'the encoded meaning' of an expression is an idealisation since meanings are always changing. This does not mean, however, that we need to go so far as to say that there is no sense in which individuals store 'core' encoded meanings for conceptual expressions. There is clearly a useful notion of 'the same concept' at the heart of what occurs in the minds of speakers of a language when they encounter the same word. When I encounter the word *house*, for example, I assume that there is something in what I construct which is shared by what you and other speakers construct on encountering the word.

The overall picture this suggests might seem problematic since the phenomena to be accounted for in language change are more nebulous and harder to pin down than might have been assumed. On the other hand, this picture suggests relatively straightforward accounts of how and why change occurs. If change is constant, the question of what 'initiates' change does not really arise. What is to be explained is how patterns emerge for individuals and across groups so that specific changes can spread through a population.

3.3 Metarepresentation

The notion of metarepresentation can be illustrated with reference to linguistic expressions, e.g. the embedding of one or more clauses inside others as in this example:

(11) Andy said that Bessie thought that Charlie ate the chocolates.

There is metarepresentation in the thought represented by (11), which embeds propositions inside each other. There is also metarepresentation in the kind of mental representation which occurs in everyday interactions, as assumed by Grice (1957) when he discusses what he sees as 'reflexive intentions' involved in non-natural meaning ('meaning_{NN}')

"A meant_{NN} something by x" is (roughly) equivalent to "A intended the utterance of x to produce some effect in an audience by means of the recognition of this intention"

(Grice 1957: 385)

Metarepresentation has played an important role in accounts of many phenomena, including in explaining differences between humans and other animals. As Sperber (2000) puts it:

Just as bats are unique in their ability to use echo-location, so humans are unique in their ability to use metarepresentations. Other primates may have some rather rudimentary metarepresentational capacities. We humans are massive users of metarepresentations and of quite complex ones at that.

(Sperber 2000: 117)

The notion of metarepresentation also plays a key role in the relevance-theoretic perspective on communication. For Sperber and Wilson, ostensive-inferential communication (the variety of communication which is accounted for by the Communicative Principle of Relevance), is characterised as involving two types of intention:

- (12) Ostensive-inferential communication:
 - a. The informative intention:
The intention to inform an audience of something.
 - b. The communicative intention:
The intention to inform the audience of one's informative intention

Clearly, understanding an intention to inform someone of an intention to inform someone is metarepresentational.

In a series of papers (e.g. Sperber 1994, 1995, 2000) Sperber suggests that metarepresentation is at the heart of human communication and language, that the evolution of metarepresentation must have preceded the evolution of language, and that we now have several metarepresentational modules, including at least a comprehension module, a logico-argumentative module and what he terms the 'standard metapsychological ability' (Sperber 2000: 136).

As mentioned above, Papafragou (2000) suggests that metarepresentation plays a role in the development of epistemic modality, where what the modal encodes has changed from something which contributes to an explicature to something which contributes to a 'higher-level explicature' of the utterance. Clearly, metarepresentation plays a role in a large number

of specific cases of linguistic communication and cognition (for discussion of a range of roles it plays within a relevance-theoretic framework see Noh 2000, Wilson 2000).

It must also be the case that metarepresentation plays a role when we encounter words or behaviour which we do not understand. Consider the following utterances:

- (13) a. I like drextones.
b. My friend is working on procedural meaning.

A hearer who has never heard the word *drextones* (I made this word up for this purpose and am not aware of it existing as a word before the time of writing) cannot understand (13a) but they can entertain the thought that the speaker likes whatever the speaker means when using this word, i.e. a metarepresentation of the object of the speaker's liking. Similarly, a hearer of (13b) who does not know what exactly procedural meaning is can use metarepresentation to think about their friend's work. Understanding utterances always involves metarepresentation, of course, but it is at least arguable that there is a particular variety of metarepresentation involved here.

Metarepresentation must play a role whenever we notice someone using an expression with a sense different from our own, e.g. when one person uses *infer* where another would use *imply*. It is at least possible that metarepresentation plays a role when children are exposed to new vocabulary as well as when this happens to adults. This might be illustrated by a change in some varieties of Scots English which affected the meaning of temporal expressions consisting of the word *half* followed by a number (*half nine, half ten, etc.*). On its later use, someone who says they will meet someone else at 'half ten' means that they intend to meet at 10.30. On its earlier use, this would have meant 9.30. The change might

be partly explained by assuming that children metarepresent the meaning of an expression like this when they hear it being uttered (presumably before they can tell the time) and then make inferences leading to a different sense than that used by adults. Metarepresentation is also involved, of course, when someone notices a difference in usage and when they comment on it (e.g. when a speaker from the earlier period objects to how younger people use the expression).

We might also refer to metarepresentation in discussing uses of the hashtag marker mentioned above, where readers have to infer what the tweeter intended by using a particular hashtag, and in uses of the word *hashtag* in speech, in utterances such as (14) and (15):

(14) Hashtag awkward.

(15) Hashtag fail.

In early uses of forms like this, the speaker is clearly expecting the hearer to recognise that this alludes to uses of the hashtag marker on twitter and how it is used there.

Metarepresentation is involved in concept adjustment and construction since our aim in constructing and adjusting conceptual representations is to derive something close enough to what our communicator had in mind. Someone who comes across the new usage of *long* discussed above needs to make an inference about what the speaker intended the hearer to infer from that usage. Representing that intended sense must be key in the hearer's adjustment to his own understanding of the sense and so to central processes of language change.

4. Further research

The discussion above suggests a number of ways in which ideas from relevance theory can play a role in accounts of language change. It seems reasonable to assume that a significant research programme could be developed which exploits ideas from relevance theory in accounting for change in general and for specific changes. The framework provides a particular perspective on the notion that change is constant and naturally accounts for the fluidity of language use.

There are some lines of future research which this paper has not discussed. Clearly, there is more to be done in exploring how ideas about procedural meaning and lexical pragmatics can be applied in accounting for language change (and ongoing work on both of these areas will, of course, lead to further research directions). This paper has only briefly touched on the role of metarepresentation in accounting for language change and on implications of the particular way in which relevance theory conceives of and accounts for indeterminacy in communication. It has not at all discussed the more general assumptions about indeterminacy developed within relevance theory, including what Carston (2002) calls the 'radical underdeterminacy thesis' or specific ideas about indeterminacy being a feature of both what a communicative act is intended to communicate (how determinate this is) and the extent to which it can be understood as intentionally communicative (the extent to which it counts as a case of 'showing' or 'meaning'). The most recent explicit discussion of the latter two kinds of indeterminacy is by Sperber and Wilson (in press) who point out that they are key to the notion of ostensive-inferential communication with which they propose to replace Grice's notion of 'speaker meaning' and that, while there is discussion of these indeterminacies in the book *Relevance* (Sperber and Wilson 1986), they constitute 'one idea

that we feel did not get the discussion it deserved'. Future work could fruitfully explore the implications of this idea for work on language change.

There are several other things which would be significant contributions to understanding in this area and which this paper has not discussed. This approach has implications for understanding of the term 'pragmaticalisation' (very roughly, changes in the pragmatic functions which expressions perform) and how it relates to 'grammaticalisation'. There is ongoing debate about what 'pragmaticalisation' should be taken to refer to (see, for example, discussion by Claridge and Arnovick 2010; Diewald 2011) and debate about whether and to what extent pragmaticalisation is distinct from or subsumed under grammaticalisation. Within the framework discussed above, however, both of these would seem to count as varieties of 'proceduralisation' and so, arguably, the distinction between the two terms might break down (as, arguably, the distinction between conceptual and procedural expressions can be seen as having become less sharp in some recent discussion).

Another topic which it would be interesting to explore from a relevance-theoretic perspective is the relationship between internal factors and interaction in language change. Traugott (2012: 549) begins her discussion of pragmatics and language change by explicitly simplifying and contrasting two general ways of approaching language change:

To simplify, one view assumes that change is internal or endogenous, in other words that grammars change (Kiparsky 1968) and focuses mainly on syntactic change (e.g. Lightfoot 1998): meaning change is hypothesized to be derivative of syntactic change ... A competing view is that usage changes and language acquisition occurs throughout life.

Change is not only internal but also external, driven by social factors and language users who are active participants in negotiation of linguistic patterning, especially meaning: “languages don’t change: people change language” (Croft 2000: 4).

(Traugott 2012: 549)

She then suggests a contrast between ‘more logical’ and ‘more interactional’ traditions:

Early work on historical pragmatics tended to privilege an “internal” view, even though speakers and addressees involved in communication are regularly invoked. In this work the clause or sentence is seen as the relevant contextual unit of language ... More recently there has been a shift toward interactional approaches with discourses and genres as the relevant contextual unit of language.

(Traugott 2012: 549-550)

It would be interesting to explore how the relevance-theoretic framework outlined above can play a role within approaches which view change as involving both internal factors and interaction. Internally, change occurs because of inferences made in contexts which lead to new mappings between expressions in a natural language and ‘states of the user’. These occur because of interaction among users and particularly because of inferences made in production and interpretation. It would be interesting to develop fuller accounts of particular changes including fuller accounts of the role of both internal factors and interaction.

This framework is also well suited to account for how non-linguistic forms and behaviours can develop encoded meanings. Wharton (2003, 2009) has already discussed this, within his broader discussion of nonverbal communication, and discussed some specific examples, e.g. the development of *yuck* and *yucky* from earlier onomatopoeic, expressive forms which in turn were derived from guttural, possibly non-communicative, sounds.

As Grossman and Noveck (2015) suggest, it seems likely that some theoretical ideas on language change could be investigated experimentally. Grossman and Noveck indicate some possible directions for developing these.

Finally, there is, of course, room for more sustained work exploring connections, compatibilities and contradictions among different kinds of approaches to the pragmatics of language change. There has been useful work so far applying ideas from relevance theory to accounts of language change, both developing accounts within an overall relevance-theoretic framework and adopting ideas from relevance theory within other approaches. There is much still to be done which would have implications for accounts of language change, for understanding of language and communication in general, and for the development of relevance theory itself.

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¹ Of course, *after* does have more than one sense in contemporary varieties of English. Traugott is suggesting only that it has not developed a causal sense like the one which has developed for *since*.

² A 'gram' is a grammatical marker or grammaticalising expression.

³ These ideas are also prefigured to some extent in earlier work, e.g. Black (1954-55) on the ad hoc development of 'deviant implications'; Searle (1979: 76-116) on metaphor as a special case of understanding speaker's meanings; Searle (1980) on conceptual narrowing.