Can semantic networks capture intra- and inter-registerial variation? Palliative care discourse interrogates Hasan's message semantics

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4.1 Introduction

Perhaps the most important line of argument in Ruqaiya Hasan's work is the idea that the semantic stratum of language can be modelled paradigmatically, through the tool which has been used to model other strata, namely, the system network (Hasan, 1996a, 2009b). As Hasan and Cloran put it (2009[1990], p. 95):

Since the principle of paradigmatic organisation applies to all levels of language, it is reasonable to suppose that the facts at the semantic level can also be represented as systems of interlocking choices.

Hasan's model of 'message semantics' (1983, 1989, 1992a, 1992b, 2009c) is principally known as a tool for studying semantic variation on the basis of speakers' social position, but this paper explores the contribution of message semantics – as a paradigmatic account of the organization of meaning – to the study of register variation, or the way that language varies according to its situational use. I argue that the framework is robust and that it has been underutilized in register studies, illustrating my argument with analyses of palliative care discourse and its relation to other registers.

An early statement about the need for modelling semantic options on a separate stratum from the lexicogrammar, and its importance for the study of register, appears in Hasan (1973, p. 273):

> It has been too readily assumed that the easiest and most valid form of describing the linguistic characteristics of registers is to state the frequency or likelihood of individual patterns or of their combinations. I would suggest that it might be advantageous to specify the characteristics of given registers by reference to some high-level semantic component.

In that paper, first prepared for a conference in 1969, Hasan illustrates the idea of the 'high-level semantic component' by contrasting utterances such as '*It certainly is lovely but it's expensive*' and '*It is expensive but it's unique...*', exploring why it is that these are not two ways of saying almost the same thing, as they might at first appear to suggest given their shared and similar lexical and grammatical items (*expensive, lovely, unique, but, it ...*). Rather, one sentence denigrates the artefact in question, whereas the other promotes its desirability, and this antithesis constitutes one key semantic component of the register concerned. Hasan goes on to say that 'no item-inventory [= lexicogrammatical item inventory, AM] could handle such features for the simple reason that they are not the property of individual items but of items of often different levels in combination' (1973, p. 274). By the mid-80s, Hasan had developed an ambitious, network-driven account of crucial contrasts in the semantics of English known as 'message semantics'. By the late 80s she had published innovative and controversial accounts of how middle class and working class mothers used quite distinct 'fashions of meaning' in essentially the same context of control, based on this approach (for example, Hasan, 1989).

Central to Hasan's vision of a paradigmatic semantics are two claims. Firstly, she suggests that the semantic systems of a language are contextually open and must be modelled that way – in other words, it is not the best kind of linguistics to draw up one semantics at a time, register by register or context by context[1]; rather a map of the semantics of any language must incorporate registerial variation within that language, and must systematize it (Hasan, 1996a; Hasan et al., 2007). Secondly, for any proposed paradigmatic account of the semantics of a particular language to be viable it must be statable – like models of other strata – in terms of system networks with realization statements for each term in the system (Hasan, 1989, 1992a, 1992b, 1996a; Hasan et al., 2007; cf. Halliday, 1973).

If Hasan's first claim holds, there would need to be evidence that such networks function to identify and explain relevant intra- and inter-registerial variation. Certainly the networks developed by Hasan have proved to be useful in describing and explaining highly significant intra-registerial phenomena, since they have generated important findings about semantic variation in the context of maternal control and in related pedagogical contexts. However, most register studies in SFL[2] and nearly all such studies using Hasan's networks have concentrated on intra-registerial variation only, or compare only very close contexts.

Coming to the second claim, Hasan and her colleagues have developed and tested realization statements for the networks. Hasan views her semantic networks as potentially language-exhaustive, but says that the networks as they stand do not reach this ideal, because they stop short in delicacy – at a point that permits examination of the questions central to her project (Hasan, 1989). While the networks and the empirical work based on them must be seen as a major development in functional linguistics, it remains important to treat the language-exhaustiveness of the networks as itself an empirical question, requiring testing across a wide variety of linguistic contexts, just as one might test a grammar across different contexts. So, to summarize, the proper evaluation of Hasan's claims, and of the viability of her semantic approach for register, has been held up because there are still too few registers described using message semantics to make robust inter-registerial comparisons.

In order to fill in some of this missing picture, the present chapter reports on a case study of message semantic analysis in the context of palliative care – specifically, end-of-life (EOL) discussions between patients and their doctors, and compares these findings with studies of other contexts that have used Hasan's networks, focussing on the network for questions (Hasan, 1983, 2009b). Comparing results between such broadly different contexts suggests that Hasan's semantic networks are indeed useful for mapping inter-registerial difference and similarity, in addition to intra-registerial variation.

One thing that the network analysis usefully brings out is the way that palliative care consultation as a discourse is dominated by the semantics of 'incipience', 'implicitness' and 'individuation', as I hope to show below. From the point of view of enhancing clinical communication, an awareness of these patterns allows researchers (and, potentially, clinicians) to track intra-registerial variation in palliative care, such as whether the topic of 'end-of-life' is made available for discussion or not in different consultations, and if so,

then to what extent, and via which semantic pathways, EOL discussion gets developed. These analyses can then contribute to research on how well different communication styles meet the needs of different patients, families and health workers.

From the point of view of linguistics, such intra-registerial variation is already valuable data, but patterns of inter-registerial variation are of particular interest, because unexpected similarities and disjuncts between different contexts are revealed, which give insight into language speciation quite broadly, including interfaces between register, code and sociolect. In the case of palliative care discourse, the crucial concern with *individuation* is also known to be a hallmark of middle-class consciousness in English-speaking societies, as Hasan and colleagues found in their foundational work with semantic networks (Hasan, 1989, 1992a, 1992b; Cloran, 1989; Williams, 1995; Hasan et al., 2007). It will be important to consider what this implies for the equitable delivery of health care services across different social class groups.

The observations reported here provide additional support for Hasan's claim that a networked semantics has the capacity to 'systematize' registerial variation, and they help justify her demand for contextual openness in semantic networks. As I hope to show below using the palliative care discussion, Hasan's approach counts as 'systematizing' register because it allows us to motivate and explain semantic features and orientations that are shared by distinct contexts, in terms of relations between linguistic strata – or in other words, in terms of meaning in context. Without such contextual openness in descriptive tools, distinct contexts cannot be compared and register as a whole cannot be modelled.

On Hasan's second claim, researchers using semantic networks in new contexts of application have invariably needed to make some adjustments or extensions to the network, for example increasing the delicacy in the networks (Hasan et al., 2007). However in my testing of Hasan's networks in palliative care and other medical discourse it appears there may be more substantive issues involved. One specific tension is that in order to 'net in' all relevant instances of what appears to be a single important semantic phenomenon, it seems necessary to modify Hasan's realization rules, in some cases perhaps allowing 'context-specific' realizations as we will see below. Such tensions provoke queries about whether it is possible at the semantic level to exhaustively specify realization relations between strata, along with exponence relations between terms in the

system and their structural 'outputs'. Before turning to the palliative care case study, a brief explanation and summary of relevant findings using semantic networks is in order.

4.2 Key findings from message semantics research

As Hasan and colleagues (2007, p. 717) report, semantic networks have been used successfully to investigate what they call 'fashions of meaning' in specific contexts. The original context was the context of 'maternal control', namely the day-to-day conversations between mothers and pre-school children that shape young children's consciousness. An analysis of approximately 22,000 messages using semantic networks yielded 'a robust pattern of variation at the semantic level correlating primarily with speakers' social location, but also with the children's sex (for example, Hasan, 1989, 1992a, 1992b; Cloran, 1989, 2000; Williams, 1995, 2001, 2005).

Although message semantics is much broader in scope than speech function alone, many of the prominent studies using message semantics have focussed on the analyses of the interpersonal function, especially through Hasan's DEMAND INFORMATION network within her interpersonal semantic system of RELATION ENACTMENT and I focus on it here because it is relevant to the palliative care case study. A particular finding that concerns us is that, although middle class and working class mothers did not differ significantly in terms of whether they asked their children to confirm information or supply it, middle class mothers tended to use certain semantic features, including [prefaced], which foregrounds point of view (discussed in detail below); [related] which modifies and links messages in terms of relevance; and [non-assumptive] which avoids construing things as obviously normal or valued (also discussed below). These features are illustrated in an exchange between Kristy, aged 4, and her mother (Hasan, 2009c, p. 254), in particular Turn 3.

1 Mother: I'm going out with some of the ladies because Sue is leaving.
2 Kristy: Mm
3 Mother: Did you know that they are going to leave?
4 Kristy: No
5 Mother: They've been building a house.
6 Kristy: Mm
7 Mother: Well, they haven't been building it, somebody else has been building it for them.

Turn 3 contains one message, exemplifying the feature [demand information: confirm: ask] – in other words it is a 'confirm question'. This message also exemplifies the feature [+ prefaced: subjective: ... child] in that Sue's leaving is presented as something that it is important for Kristy to have an awareness of '*did you know'*, and construes the question of knowing as one that is up to Kristy – she has privileged access. The feature [assumptive] is also illustrated here by its absence. If Kristy's mother had said '*Didn't you know they are going to leave?'* this would be [+ assumptive] in that it implies that Kristy ought to know or that such knowledge is obvious, however in this case the question is non-assumptive. In Hasan's analyses (based on the statistical method of Principal Components analysis) these features clustered with some others forming a syndrome of features that was used more frequently by middle class parents than by working class parents, and also used more frequently with girl children than with boys (Hasan, 1989, 1992a, 1992b, 2009c). Additionally, turn 1 illustrates the feature [supplementing/related[3]], since the second message in turn 1, '*because Sue is leaving',* specifies the reason for '*going out'* in the first message.

As Hasan points out, the various features used by the middle class mothers can be explained in terms of the principle of 'individuation', according to which 'each person is a unique being and their beliefs and opinions are inaccessible to others without conversational mediation' (Hasan, 2009c, p. 261). By contrast, working class mothers, who tended to avoid prefacing and supplementary messages, and tended to use assumptive questions, subscribe to 'the principle of naturalised reflexivity, acting as if most things can be taken for granted between persons who share the contexts of living with each other'. Hasan also stresses that these are two different orientations to interaction where 'neither is better or worse; each is maintained at some expense' (Hasan, 2009c, p. 263).

What the message semantic analysis of maternal care allowed Hasan to demonstrate was that clusters of semantic features, when seen as ensembles or syndromes, can constitute a 'sociolinguistic variable' which operates within a specific context and distinguishes class groups (Hasan, 1989). A second phase of Hasan's project focussing on kindergarten children talking with their teachers represented an additional, albeit closely related, context investigated with same semantic networks. Taken together (e.g. Hasan, 2009f), Hasan's

studies demonstrate the kind of variation suggested by Bernstein (1971) and explain in part its mechanism. Countering Labov (especially – according to Hasan – Weiner and Labov, 1983) Hasan argues that variation occurs at every level including the semantic, and that semantic variation is not merely indexical but constitutive of social identity (Hasan, 2009a, 2009d).

One quite different social process studied using message semantics is political media. In a study of Australian broadcast media coverage of the second Iraq war one key finding was that, surprisingly, in TV interviews with leading politicians and commentators covering the initiation of the war, journalists did not ask the kind of questions that required these experts to explain *why* the country had in fact gone to war (Lukin, 2012). Rather, there was a striking use of questions such as the question put to the then Prime Minister, "*Did you imagine that you would be seeing the kinds of images of innocent victims now emerging…*[4]*?"* The selection of features [confirm] from Hasan's DEMAND INFORMATION network, together with the selection [mental] from the CLASSIFICATION network, along with the feature [prefaced] and other features, make the focus point of the question the mental state of the PM in the lead up to the invasion of Iraq. The question is one which seeks not so much to know 'what the world is like; it is rather an enquiry about someone's … "mental representation of that world"' (Hasan, 2009b, p. 250). For Lukin (2012), message semantic analyses of Australian and international media suggests the inadequate social functioning of the fourth estate.

Other contexts studied with semantic networks include joint book-reading with young children (Williams, 1995, 2001, 2005), constructing 'offers' in ordering pizza (Matthiessen et al., 2005), court discourse (Maley and Fahey, 1991), political media (Lukin, 2012) and surgical teamwork (Moore, in press, Moore's case study in Lukin et al., 2011). See Hasan et al. (2007) for brief descriptions of other contexts in which message semantic analyses have been productive. In each case, the achievement of the network-based analyses has been to organise multiple attributes of speakers' meanings into coherent patterns that can be seen as motivated by features of the context of situation and the context of culture studied.

I now turn to the case study on palliative care.

4.3 Semantics and variation in palliative care discourse

In this section I report on a study of spoken interaction between palliative care doctors and patients with advanced cancer by way of testing Hasan's semantic networks for their ability to capture and organise crucial variation in this repercussive context. Note that consultations often included a family member or members. Goals of the study included mapping the typical-actual linguistic practices found in this important social process, identifying linguistic variation that might be associated with contextual phasing, and identifying linguistic variation that might be associated with gradations in the quality of health care delivery, including the successful discussion of end-of-life issues. The approach set out by Hasan of linking paradigmatic accounts of context, meaning and wording provided the core principle of our analysis, and particular use was made of her message semantics model.

4.4 Implicitness, incipience and individuation in palliative care discourse

Before discussing the text analyses, some contextual background on palliative care is in order. One of the many challenging things for practitioners in the palliative care context is that, if they are going to follow current consensus models of good practice, doctors (and other health care professionals) have to balance a number of seemingly competing directives on how to approach EOL discussions (for example, see Clayton et al., 2007b). Doctors are obliged to provide patients with opportunities to discuss EOL issues, by raising EOL topics and facilitating talk about them. But they must not force patients to talk about EOL issues if their patients do not wish to discuss them – even though it is now well documented in the literature that discussing end-of-life is associated with more realistic patient expectations and less aggressive medical care, which are in turn associated with better quality of life for patients and better caregiver adjustment after bereavement (Clayton et al., 2007b; Wright et al., 2008).

This brings us immediately to the concepts of implicitness, incipience and individuation, which, I argue, are core semantic characteristics of palliative care discourse, possibly in

the sense of what Hasan calls an 'over-all tone' that may pertain to whole texts or whole discourses at a particular historical moment (Hasan, 2009e) or possibly in her sense of 'formative motif'(2009b). As I hope to show below, the linguistic resources that bring such a sense of implicitness, incipience and individuation into being through doctor-patient talk can be identified – at least in part – as corresponding to specific selections of features from Hasan's semantic networks, and these in turn can be seen as motivated by a contextual configuration that prioritises patient agency and autonomy in a particular way and orients to local immediate and longer term goals (Hasan, 2009g) for both individual patients and the developing professional identity of palliative care (cf. Semino et al., 2014). These concepts also turn out to be important in identifying registerial features that palliative care discourse shares with quite distinct contexts, based on shared configurations of contextual and semantic features.

At the request of a team of palliative care and medical communication researchers, a small study using linguistic approaches was built into the research design of a larger study on palliative care consultations. The larger study was a randomised controlled trial design (RCT) which ultimately showed that patients who were provided with a question prompt booklet had more end-of-life discussion (EOL) with their palliative care physicians than those in the control group (Clayton et al., 2007a). The linguistic sub-study concentrated on how end-of-life issues emerged as topical, and how discussion developed (or not), looking in particular at the role of doctors' questions.

In the linguistic sub-study, my focus was on how to model different ways of framing questions – in particular, how doctors' framings might facilitate (or hinder) an overall strategy of enabling EOL talk. Although it must be stressed that interactants always co-construct communicative events (Drew and Heritage, 1992), doctors' questions were of particular interest because they are the profession's primary 'entry point' into offering patients options to discuss EOL issues. The health communication literature acknowledges this, but support for doctors' reflective practice on question strategies is held back, because its models of how questions vary are largely limited to describing questions as either open or closed. A more comprehensive analysis of how questions vary could be useful for professional development and research in this area[5].

Since it claims to be an 'exhaustive' semantic network, Hasan's demand information network could be expected to provide a comprehensive set of distinctions in question

framing. And since it is designed to work in conjunction with semantic-level analysis of experiential, textual and logical features, and relate all such results to accounts at the strata of context and lexicogrammar, the networks should be able to capture any variation in question framing that influences the way that end-of-life discussions unfold in palliative care. In other words, one test of the networks is that they display 'contextual significance' and the palliative care context is a good place to test for significance. The DEMAND INFORMATION network was therefore our primary analytical tool (Hasan, 1996a, 2009a) and other aspects of Hasan's message semantics were drawn upon. [6]

For the linguistic analysis a subsample of 46 consultations across 6 doctors was examined. These included consultations with a question-prompt booklet and those where no booklet was given. The consultations ranged from not raising EOL issues at all, to extensive discussions about EOL issues. Data excerpts shown below were selected for their suitability in illustrating transitional points where EOL discussion emerged, or points where it might have developed but did not. [7]

4.5 Exemplifying end-of-life talk (EOL talk) and how it develops

Extract 1 below shows the kinds of question and answer patterns associated with end-of-life discussion. In all examples, D=Doctor, P=Patient, K=Kin (a family member, partner, or close friend of the patient). Arrows in left hand margins mark item(s) under focus. Underlining marks questions or features of questions under scrutiny that might otherwise be unclear. The numbers in the leftmost column are turn numbers. Where relevant, message numbers are indicated after an underscore.

Extract 1 – Transcript 101, turns 135-175

	135	D	Are you finding any problems with nighttime?
	136	P	No I just ... lay there and wait for daytime to come.
	137_1	D	Do you?
	137_2		A lot of patients tell me that nighttimes are sometimes very difficult
	137_3		especially if you're not sleeping;
	137_4		like you said you're only sleeping for 4-5 hours.
	138	P	Yes I can go to bed at 10 o'clock and wake up at 2 and then I just lay awake there.
	139	D	What are you thinking about?
	140	K	Listen to the radio most of the time.
	141	D	Really?
=>	142	P	Just listen to talk back radio, what's happening, and think how much longer and all these normal questions – things go though your mind I guess.
	143	D	Yes sure and that is the quiet time when your mind thinks about these sorts of things. Do you ever get fearful?
	144	P	No I don't get fearful I just worry about leaving the kids behind! That's the thing that worries me the most.
	145	D	OK which is the natural feeling isn't it? Shows that you're very close.
	146	P	Oh we are.
	147	D	Do you ever think about the pain and the breathlessness and worry about that side of things?
	148	P	No because I think the main thing I think about is not waking up in the morning and having the kids – I call them kids but they come down and I'm no longer there. That sort of worries me a bit.
	149	D	OK have you spoken about that?
	150	K	Yes we all know.
	151	D	Is that something that worries you Keith [Kin]? [13 turns omitted]
	165	K	Yes well like Dad said, if he could stay at home for as long as possible, we'll do that. I've already told him, I've told the other nurses and that that I'm prepared to do everything at home and ... if he loses bodily functions well that's part of life ...
	166	D	Sure.
	167	P	And I've got no worries whatsoever doing that.
	168	D	Yes but that doesn't necessarily always happen. People just assume that's going to happen.
	169	K	Well we were told 6 months ago that's what's going to happen – he's going to lose all his bodily functions and become a vegetable and just waste away.
	170	D	Yes – no, no –
=>	171	K	One of the ladies in here said a couple of weeks ago that he could be like he is now.
	172	D	Absolutely!
	173	K	And could stay that way.
	174	D	Absolutely.
	175	P	That made me feel a lot better actually.

4.6 Transition points in EOL talk

The excerpt above starts after 134 turns at talk, covering mostly medication and routine symptom updates. Arguably, the point at which the discussion starts to

instantiate 'EOL talk' is at turn 142 where the patient says that the issue of 'how much longer' goes through his mind – implying '*how much longer will I live*?' This implicit reference has cataphoric cohesive ties with other indirect references to death in turns 144 '*leaving the kids behind*' and 148 '*not waking up in the morning*'. The interaction then expands to include the patient's son's thoughts, as seen in the implicit '*we all know'* at turn 150.

The ensuing EOL discussion, which can't be shown in entirety for reasons of space, covers a total of 63 turns, and deals with a number of logistic issues, as well as some quite intense discussion of how people feel about these issues and how they manage them. Crucially, the discussion develops in a way that allows the doctor to correct a misapprehension that the patient and patient's family had arrived with, namely that loss of function towards the end of life is inevitable (see turns 165-175). In the next section I consider how the doctor's questions seem to open up the space for EOL discussion to develop, using Hasan's semantic networks to characterize strategic choices made.

4.7 Strategic use of questions

The first thing to notice is that most of the doctor's questions are a kind of polar interrogative or a 'closed question', such as '*Are you finding any problems with nighttime?*' in turn 135. Yet the doctor does not come across as pushy, nor does this stretch of the consultation have the kind of one-way directive manner that often occurs during the part of a consultation that is focused on checking physical symptoms. The second thing to notice about turn 135 is that a kind of gate leading to EOL discussion seems to be opened by this particular 'closed question' from the doctor, in conjunction with the way the doctor responds in turn 137 to the immediate answer given by the patient in 136. Asking questions is of course nearly always part of a complex communicative project, and it may be more common for questions to have a 'multi-unit design' rather than occurring as a single interrogative clause (Linell et al., 2003; cf. Berry, 1981; Heritage and Greatbatch, 1991; Martin, 1992; Williams, 1995).

4.8 Analysing question framing as options in semantic networks

Under Hasan's approach, as in SFL more generally, in order to think about how this seemingly innocuous couple of turns at 135-137 work, we need to recall the key concepts of *function* and *form*. Linguistic systems can be seen as sets of *choices* which enable people to shape their interactions as they unfold across three primary functions – changing the *field of experience*, the *interpersonal relation*, and the *textual organization*[8] as the interaction unfolds.

At any point in a professional consultation or any other dialogue, speakers are faced with a multitude of choices (though usually not deliberate choices[9]) in how to put together their next message. One of the most central choices is how the speaker is going to position their addressee(s). From the interpersonal point of view, when one asks a *question* one is acting out a social role of demanding some information from an interactant, whereas when one makes a *statement* one is putting oneself in the role of the giver of information and, simultaneously, putting the addressee in the role of the receiver of information for a certain time. At this very basic ordering of interpersonal choice, the remaining alternatives are to demand goods and services (with a *command*, including suggestions, requests, etc.) or *offer* (see Halliday and Matthiessen, 2014).

Along with these primary choices in speech function, there are more 'delicate' choices as well, and Hasan's system networks map out one view of these as a system of RELATION ENACTMENT[10], which includes options in the system DEMAND INFORMATION. Hasan's model is a claim about how different patterns of wording are systematically related to different kinds of interpersonal meanings within questions, though not in a one-to-one fashion (Hasan, 1996a; cf. Harris, 1984; Labov and Fanshel, 1977; Tsui, 1992).

To illustrate the message semantic approach and its usefulness, consider the following five 'versions' of turn 135 from palliative care transcript 101, each of which selects slightly different interpersonal meanings. The version shown first, as turn 135a, is the actual question used by the doctor in Consultation 101.

135 a Are you finding any problems with nighttime?

135 b Do you have any problems with nighttime?

135 c What problems do you have at nighttime?

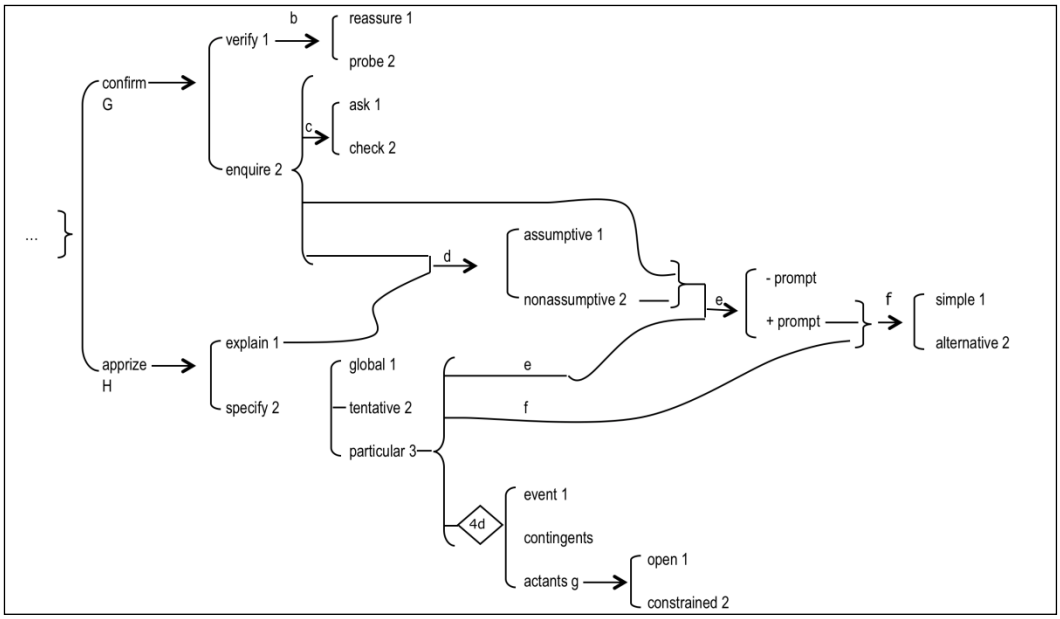
135 d What are the most problematic things for you at nighttime?

135 e What about nighttime - are there things that worry you?

Each of these versions of the question is a way of trying to get the patient to identify and describe problems that he might have regarding nighttime, but each puts a different kind of spin on the interpersonal relations between the addressee (at this point the patient) and the speaker (here the doctor) and how these roles might change over the subsequent turns.

4.9 Confirm questions & apprize questions

The question that opens our excerpt from Consultation 101, '*Are you finding any problems with nighttime?*' displays Hasan's feature [confirm], located at the most primary distinction in Hasan's DEMAND INFORMATION network (see Figure 4.1). This question construes the existence of nighttime problems as a matter that is not yet settled between the doctor and the patient, and construes the patient as in a



position to settle the matter. The feature [confirm] nets in all such questions that seek confirmation about some proposition. The question in turn 137 also selects the feature [prefaced] which is discussed in more detail below.

Figure 4.1 Hasan's 'Demand Information' network (2013, p. 289, see also Hasan, 1996a and 2009b for earlier versions; entry condition in each version is 'demand information')

The contrasting feature at this initial fork in the DEMAND INFORMATION network is [apprize], as exemplified in Turn 139, '*What are you thinking about?*' and also in the hypothetical Turn 135c above, '*What problems do you have at nighttime?'* In this example, nighttime problems are represented as a given – as if already known by both parties to exist. Here the doctor's role as questioner is set up as apprizing some missing element of a proposition (which problems?) rather than confirming or disconfirming a proposition. The semantic feature [apprize] is realized by pre-selecting mood as interrogative non-polar. One thing that such an [apprize] question would do is allocate the patient, for their next move, the role of *specifying* which problems were occurring for them at night. This is not to say that the patient's next move could not be to deny that problems exist, but in that case a dispreferred response would be required (Levinson, 1983).

One characteristic of [confirm] questions is that they often open two conversational doors at once, leaving the addressee with the opportunity to decide which way to move. When a speaker says 'Have you got any questions? or 'Are you finding any problems with nighttime?' the addressee may orient to the grammatical (polar interrogative) form and just say 'no', meaning there are no problems. Alternatively they can report a problem or problems, in which case the 'Yes, I do have problems' is taken as understood.

These kinds of questions have elsewhere been described as incorporating a pre-condition: in logical form something like 'please tell me whether you have a question and if so what'. In the palliative care context, this property makes [confirm] questions valuable for opening up the space to talk about EOL without pushing people into it, which is important for facilitating discussion about difficult topics.

Interestingly, in the excerpt from Consultation 101 above, the patient tends to answer [ask] questions with a 'no' but then gives some information that implies 'yes'. This apparent contradiction does not stop EOL discussion from developing, but in fact appears facilitative.

Arguably therefore, the choice of [confirm] framing to begin this episode from Consultation 101 helps achieve the topical move into EOL issues in this case. I am not suggesting that [confirm] questions are 'better' questions than [apprize] questions, or that this choice exhausts the strategic semantic footwork available. The initial point is that choices in question framing have a range of semantic consequences which are subtle, which go further than the open/closed distinction, and which can be described in a systematic way, beginning with [confirm] versus [apprize]. Further distinctions in questions from Hasan's model also seem to be important in shaping discourse about EOL, along with choices from experiential, textual and logical networks. There is insufficient space to detail all relevant distinctions here but in the sections below I outline some and illustrate their function.

4.10 Different types of confirm questions: options ask, check, probe & reassure

Although [confirm] questions are very often realized as polar interrogatives, as in the first example, the semantic feature [confirm] can be realized by one of several kinds of indicative clauses or a clause complex. The more delicate options in [confirm] are realized by distinct lexicogrammatical features or groups of features. In fact, if a speaker selects [confirm], they *must* further select either [verify] or [enquire], thus [confirm] is an analytical category only – it cannot be instantiated without selecting further features[11]. The same is true for Hasan's next level of delicacy. If a speaker selects [enquire] they must select either [ask], by using a polar interrogative, or [check] by using a declarative with a Tone 2[12]. Examples include:

[confirm: enquire: ask] Are you finding any problems with nighttime? (101_135)

[confirm: enquire: check] So she's not sleeping through the night? (2307_486)

If a speaker takes the [verify] pathway they will select either [reassure], which is realized by a declarative with a reversed tag, or [probe], which is realized by a declarative with a constant tag, according to Hasan's specified realization rules.

[confirm: verify: reassure] It's hard, isn't it? (1907_66)

[confirm: verify: probe] I take it that is your husband, is it? (2308_39)

4.11 The crucial role of probe and its agnates in EOL discussion

In the palliative care data [ask] and [reassure] questions occur frequently, and [check] questions are not uncommon. Question types described by Hasan as [probe] (with the realization declarative: tagged: constant) are rare in the transcripts, but items with an arguably similar function occur regularly and are exemplified by turns 137 and 142 in Consult 101.

136 P No I just ... lay there and wait for daytime to come.
=> 137 D Do you? [confirm: verify: elliptical probe[13]]

In Hasan's clearly articulated accounts of the terms in the systems and the possible realizations for those terms (see, for example, Hasan et al., 2007) ellipsis sometimes plays a role in identifying options. If we retrieve the elliptical elements in the message in turn 137 this question equates to '*Do you just lay there and wait for daytime to come?*' Since this question directly follows the patient asserting this fact, the question at 137 cannot be heard as merely a request to supply missing information – its function is not simply to [ask]. I suggest it could be descriptively treated as a kind of [probe] where the initial clause is elliptical and only the tag is specified, as a result of its place in the interactive and topical sequence[14].

Like Hasan's original [probe] such elliptical probes build in flexibility to the next speaker's options for responding, while maintaining the focus on the information provided in the interlocutor's last turn. In Consultation 101 at this point the doctor gives a short description of some of the problems that patients typically have, as a form of validation, giving some form of encouragement to the patient to further discuss EOL.

Notice, at turn 137, that the doctor does not merely accept the patient's disconfirmation of the idea of nighttime problems and move on to the next topic. The strategy the doctor follows here can be seen as one choice among several, where others might simply move on, or perhaps use a more direct, challenging line of questioning, such as, '*Don't you think laying there waiting for day is a problem?*', using a question with the features [confirm: verify: ask; assumptive]. In comparison with such a challenging strategy the elliptical [probe] question can be seen as a way of creating an opportunity or invitation for the

patient to step into the 'problem' space without being pushed – keeping that gate open a little longer. Very shortly after, a similar probe-like question is chosen by this doctor, in turn 141.

	139	D	What are you thinking about? [confirm: enquire: ask]
	140	K	Listen to the radio most of the time.
=>	141	D	Really? [confirm: verify: elliptical probe]
	142	P	Just listen to talk back radio, what's happening and think how much longer and all these normal questions – things go through your mind I guess.

This time, the gate has been held open long enough and with enough sense of optional invitation. The patient steps gingerly into this space of EOL issues, which is incipient at first as shown above, but becomes quite explicit, even including the very need to discuss EOL issues.

In one sense the Doctor's Turn 137 illustrates question types which may hold up topical progression of a conversation, but arguably the message is [progressive] not [punctuative] in terms of realization rules (it has a Predicator, although elliptical) and it is quite apparent that its inclusion changes the direction of the discussion. The question at Turn 141 is perhaps closer to a [punctuative] message but it too meets requirements for [progressive] and in fact its grammatical alter-ego (the clause) selects for Finite, Predicator, and Polarity at minimum.

One noteworthy feature of Consultation 101 is that there are three interlocutors, and these probe or probe-like questions from the doctor serve at least in part to calibrate the views of the three interactants. Therefore without ellipsis Turn 141 might incorporate a third person subject or a second person or subject/addressee: '*Does he / do you really listen to the radio most of the time?*' To my mind this is a good reason to err on the side of reconsidering additional terms or additional realizations from other registers that might modify or amplify the original Message Semantic proposal, since there is no reason to privilege dialogues of two interactants only in grammar or semantics – especially in spoken language.

If the above probe-like questions (realized as tag only, and modal adjunct only respectively), seem to be agnate to each other and in turn to Hasan's original [probe] questions, then there are also some other items in this agnation series, which in turn appear

to shade topologically into systems for prefacing and supplementing messages (projection/expansion as clausal relations). Consider the following.

Extract 2 – Consultation 2406, Turns 258-279

268 D Do you find the effort of eating an issue? [confirm: enquire: ask; prefaced]

269 P Yes it is at times.

270 D Yeah, mm yeah Ok.

271 P It's painful there. That's probably what turns you off eating I guess[15]?

272 D Mm, mm. We'll come back to that.

[turns omitted]

278 D You've lost a bit of weight, is that right?

279 P Yeah since um, since I was first diagnosed. I was 74 kilos before I had the lung out.

In each case, a place can be found within Hasan's system. For turn 271 in Consultation 2406, '*I guess*' could be treated as a prefacing element, since there is no stipulation in the realization rules that the projecting clause needs to precede the projected clause in a [prefaced] message. In turn 278 the doctor's use of '*is that right*' could be treated as a separate [check] question, following a message of the type [give information]. But these examples are very close in function to the [probe] question with its declarative + polarity-consistent question tag, and they productively contrast with the reversed tag [reassure] and its variations, such as '*You've lost weight, isn't that right*?' It seems unhelpful not to be able to net these into a general grouping, for various reasons. One important reason is suggested by the distribution of confirm type questions across the palliative care corpus: some individuals seem to use [reassure] as described by Hasan, whereas others seem to favour features such as *'is that right'* to do similar interpersonal work. In other words they are variants of some feature. Our picture of the variation within and between register domains such as palliative care will have important inaccuracies if we do not net in such agnation relations around question types.

As well as the semantic functions of the question types described above, there are interesting patterns in our data that involve the way that questions are sequenced and nuanced, which Hasan's system serves to bring out (although patterns such as this are exactly the kind of phenomenon that could go unnoticed without sufficient capturing of agnate features). For example, from the interpersonal perspective, Excerpt 1 is organized around an iterative sequence which can be seen to occur quite commonly across the palliative care corpus, although it is not possible from the data analysed so far to make any strong statements about obligatory and optional moves in this register. In the excerpt shown, the doctor begins a topic with an [ask]^[verify] sequence, followed by an [apprize: specify]^[verify] sequence, then another ask]^[verify] sequence, then [ask], [ask], [ask]. In Consultation 2406, a similar pattern appears, if we net in 'is that right' and other forms that arguably function as a kind of [verify].

If we overlay such patterns onto a mapping of lexical sets and/or process types[16] we get an even richer view of the 'motivated selection' occurring (see Jakobson, 1987; Butt, Moore and Tuckwell, 2013; Butt, Henderson-Brooks and Moore et al., 2014). In Consultation 101, we see that the series of [ask] questions described above sets up a kind of graduation (Martin and White, 2005) of mental activity from turn 135 to turn 141: *have problems – get fearful – think of pain – worry about that side of things*. This kind of graduation[17] is a common pattern across the corpus, interacting with delicate question types, to create a semantic drift (Butt, 1983) that adds up to the higher level semantic components I have described incipience and implicitness – although the unit in question that selects [incipient] as distinct from, say [abrupt] may be a unit 'larger' than the message.

A further feature that can only be briefly mentioned here for lack of space is the frequent selection of options from various networks that have some measure of indefiniteness. These include the deictic 'any' in *'any problems'* in 137; the general process, and unspecified time and place, in the phenomenon the patient thinks about in 142, namely *'what's happening'*; and the obscured process also in 142 '*how much longer*'; along with hyponymic relations that are invoked regarding such unspecified items, as in '*these sorts of things*' and '*that side of things*'. It becomes understood that 'these sorts' and 'that side' of things are things pertaining to the end of life.

4.12 When opportunities for EOL talk are not taken up by the patient

In this section I give two additional short extracts to illustrate some of the intra-register variation within this highly localised (Sydney, Australia; mid 2000s) domain of clinical interaction, and to help support my argument that this register shares some important variability with the variability in contexts of maternal control. Or perhaps more importantly, what the material here displays is the interconnectedness between the domain of palliative care and the domain of maternal control – that Hasan's networked account of semantics helps to show how the patterns at work in these very different domains are really parts of an overall system of contrasts – the registerial repertoire of (Australian) English. I begin with a section from Consultation 105 in which the doctor's attempt or offer to move into EOL topics is declined by the patient.

Extract 3 – Consultation 105, turns 90-95

90	D	Do you worry about the future? [enquire: ask]
91	P	No.
92	D	OK.
93_1	K	We can't discuss it.
93_2		We never talk about it.
94_1	D	You never talk about it? [enquire: check; assumptive; non-prefaced]
94_2		Right, and you're happy not to talk about it. [check; non-assumpt; prefaced]
94_3		You don't want to talk about it, Paul? [check; assumpt; prefaced]
95	P	No I'm quite happy not to talk about it.

In turn 90 the doctor's question is of the type [confirm: ask] and is similar in many ways to the question '*Do you ever get fearful*?' from Consultation 101. Unlike the patient in Consultation 101, this patient gives a simple 'no', completing their answer. In this case the patient's partner/carer (K) elaborates with '*We never talk about it*', which although it seems like a way of closing off that topic, actually provides a small aperture for the doctor to explore this couple's perspective on talking about EOL issues.

At this point the doctor switches from [ask] questions to a series of [check] questions, additionally manipulating the feature [assumptive] from the DEMAND INFORMATION and features from the PREFACING network, to tease out the 'mind' of the patient and their kin. The first [check] question, addressed to the carer, '*You never talk about it*?' takes the value [+assumptive] by combining negative polarity in the Finite, with the feature [enquire] [18]. As discussed with reference to Hasan's mother-child discourse studies, this feature implicitly codes speaker expectation and values. In this case the [assumptive] feature implies that it is unusual (or potentially problematic) not to discuss EOL issues. The doctor's subsequent question drops the value [assumptive] [19] but takes the feature [+prefaced], *'And you're happy not to talk about it?'* The final question in this sequence is addressed back to the patient, and includes both [+assumptive] and [+prefaced]: *'You don't want to talk about it Paul?'*

4.13 A note on prefaced questions

As with Hasan's findings on mother-child language introduced earlier, the feature [prefaced] makes someone's viewpoint the focus point of the question. Hasan calls this a 'prefaced' message because, semantically, it adds a kind of 'point of view preface' to the underlying non-prefaced message.

x	You never talk about it?
x	You don't talk about either?
You're happy	not to talk about it?
You don't want	to talk about it?

preface	+	underlying msg

Note that the final extract from Consultation 105 displays the feature [prefaced: subjective: addressee (patient/carer/both); experiential: idea: reaction], thus it is the patient's and carer's views that are made the choice point. Because it foregrounds point-of-view, the selection of [prefacing], both with and without [assumptive] here,

helps to construe the possibility of three separate views (doctor, patient, carer), and perhaps even imply the idea that whether you talk about the future or not is less important than whether you have the same perspective as your partner about such talk.

In addition, this strategic manipulation of [assumptive] and [prefacing] options can be seen as a pathway into achieving what turns out to be a remarkable but concise metadiscussion about EOL talk, by a couple who have agreed not to talk about it. For instance, Consultation 105 contains a comprehensive rationale about why EOL is not to be discussed, which demonstrates the couple's philosophy about dealing with the unknown: see turns 99-101 below.

Extract 4 – Consultation 105, turns 99-101

99 K When we saw Professor X, he said everyone handles shock, you know differently.

100 D Differently, yeah.

101 K And he said, if you've got the attitude that you can take today, today – you wake up in the morning and enjoy the day, and wait and see what tomorrow's got – it's a good way if you can be like it.

Features from all four networks are of course involved in the subtle semantic drift achieved in this discussion, but they are beyond the scope of this paper to consider.

4.14 When the doctor doesn't build on incipient EOL talk

A final extract is provided to illustrate the case where EOL discussion is not raised in any individuated way. The comparison of this extract with others shown suggests that the semantic variation captured through message semantics appears to be related to the presence or absence of EOL discussion. It should be noted that in the following consultation the doctor uses fewer confirm questions, in particular fewer [check], [reassure] and [probe] questions, and fewer questions overall than the other consultations shown in this chapter. The consultation is however very long, and the doctor very attentive, with many elliptical [ask] questions posed, such as, '*Any other concerns*?'.

The feature [prefaced] is used, but what is interesting in this consult – and arguably criterial – is that this uses his own viewpoint as the mediating perspective in [prefaced] messages, rather than the patient's or carer's viewpoint as demonstrated in Consultations 101 and 105, and seen elsewhere in the corpus.

Untaken opportunities to develop the patient's contributions into discussion about EOL topics, including how much longer she is likely to live, and fears or concerns about that, occur in Consultation 2307 at turns 353, 355, 409 and 493.

Extract 5 – Consultation 2307, turns 350-493 (some turns omitted)

	350	D	I'm very pleased the way things are going. Did you have any questions at all about any of the medicines, anything at all?
=>	351	P	Oh I am just concerned about the usage of morphine.
	352	D	OK what are your concerns with that?
=>	353	P	Oh I normally hear that when people are on morphine they are at the end of the road.
	354	D	That's the most common thing that people say.
=>	355	P	How far at the end of the rope am I?
	356	D	OK.
	357	P	((laughter))
	358	D	The thing with morphine, is that what you've just said is a very common thought but it is totally inaccurate. We have patients on morphine for 5 or 6 years, ok, and we use morphine for 2 particular reasons. One is obviously pain... All I can do is to re-assure you that in your situation it is very very safe. And your concerns are also very normal.
	-----		[turns omitted]
	407	P	I used to work at a nursing home.
	408	D	Yes.
=>	409	P	Patients who had been given morphine, they they die shortly after.
	410	D	Well the reason they are usually given morphine is they're about to die anyway, OK because they're suffering.
	413	P	Mmmm.

414 D You know that they have pain. They have pneumonia ah and a lot of patients in the end-stage or the terminal phase are suffering. So we give them morphine to ease their suffering.

----- [turns omitted]

491 D Any other concerns?

492 P No.

=> 493 K Um my concern is her sleeping, ah wakefulness. And waking up in the middle of the sleep.

494 D So she's not sleeping through the night...Most people will wake up maybe once through the night and go straight back to sleep. And with the problems that you have, such as a bit of shortness of breath or a bit of a cough. The fact that you wake up doesn't concern me too much. I'd be more concerned if you woke up ...

This doctor responds energetically to patient and kin questions, but in a different way from others displayed above, giving rich detailed information about the role of morphine which is relevant but may not have been [adequate] as a reply to the patient's question '*how far at the end of the rope am I*'? Assuming that the patient in 2307 is really wanting to talk about her own 'time left', this has largely failed. And in contrast with the discussion in 105 about what 'never gets discussed', when it's the doctor who does not step through a possible 'open gate' for potential EOL talk, there is generally no metadiscussion about it, and this may be a problematic asymmetry.

4.15 The role of semantic variation in styles of palliative care practice

While the kind of message semantic features selected by a doctor cannot directly or necessarily produce or block EOL discussion, there does seem to be a predisposing relation of some kind between these phenomena. For instance, if we consider the doctor's discussion of EOL in 2307, in terms of its generalising semantics (what everyone says and what normally happens), in terms of professional ethics (what a palliative care doctor does and does not do, that is, relieve suffering, but not shorten life), and professional judgement (what the doctor, not the patient, is most and least

concerned about), then taken together these features are consistent with each other. They are also semantically consistent with the message semantic features observed in his discourse, such as his selection of self-oriented [prefacing] [20] and his non-selection of [probe] questions, which would hand topical development and relevance (but not next topic selection) to the other party.

At the same time, the other doctors discussed in this chapter, from consultations 101, 105 and elsewhere, are also using consistent semantic orientations when they select other-oriented [prefacing], [probe] and other [verify] questions, and tease EOL discussion out of minute apertures.

As in Hasan's study of the discourse of maternal control, the contrast appears largely to be around the construal of individuation (cf. Martin, 2010). To put it another way, individuation is a site of intra-registerial variation for both contexts. But palliative care discussions are distinct in terms of their implicitness and incipience: even the less individuating dialogues display tokens such as '*thinking about things'*, '*all of this stuff',* and '*what happens from here*' along with sequences such as '*Do you have any concerns ... anything at all ... about what's happening ... cards that are to play*'[21]. In other words, inter-registerial difference is also indicated by the message semantic analysis of palliative care.

A number of issues arise from this analysis, most of which can only be touched on in this chapter. An important one is that, if individualized concerns are on the agenda of the patient, then the semantics of individuation, incipience and implicitness are interdependent.

As Hasan points out, different ideologies give rise to different evaluations of strategies such as prefacing, individuation and implicit speaking. Prefacing for instance can be taken as bolstering authority, or as a feature that is crucial to the construction of point of view (Hasan, 2009b; Cloran, 1989). Implicitness can be taken as respectful of the other's right not to be confronted with unwelcome topics, which links it with individuation.

These values in turn must be seen as related to, perhaps manifesting, features of the context of western culture more generally, in which death and dying remain taboo (Exley, 2004; Seale, 1998). The creation of a professionalized discourse that individuates patients appears to be one response to the awkwardness of death and dying, but one which also

incorporates such awkwardness in a 'routinized' semantic orientation – or register (Linell and Bredmar, 2007; Sanden et al., 2001). Walter (1991) suggests that modern societies – as societies – handle and process death very well, but the individuals who are dying or bereaved become 'uniquely isolated, lepers even, because they highlight the Achilles heel of the modern individual' (Walter, 1991, quoted in Exley, 2004, p. 112).

In other words, the model developed by Hasan brings out the 'solidary' nature of relations between wording and meaning (Hjelmslev, 1961) as well as the solidary nature of relations between meaning and context. It makes sense that prefacing should occur in environments of quite a different type in cultures where individuation is considered to be important, whether at home reading books in the early years of one's life or in the doctor's rooms discussing its end.

The exact nature of these solidary relations requires more empirical and theoretical work, around questions such as the following.

Is the predisposing relation between those semantic features selected and the extent of EOL talk taken up a predictive or a realizational relationship?

Do the three features isolated above (individuation, incipience, and implicitness) constitute a kind of 'badge' of palliative care, or possibly of a female-style of palliative care practice, or of a middle class style of palliative care practice?

What are the implications for patients who are not middle class and/or western, if access to the meaning systems that organise palliative care discussions are differentially distributed, based on patient's social and cultural positioning?

This last point is particularly important and suggests a role for 'variationist' research across health discourse more generally (Williams, 2014). Although they are separate theoretical constructs, register cannot be corralled from code, as pointed out by Bernstein (1971) and as shown to be crucial to equity across a range of contexts, whether studied using message semantics or other analytical tools (for example, Martin, 2012; Christie et al., 1991). Health status and health care provision are, like education, notoriously better for the middle class and resistant to equity interventions. Palliative care, like other specialisms, has produced research and resources to help meet the needs of patients from linguistically diverse backgrounds, but class-based coding variation of this kind does not appear to have

got onto the clinical research radar and would require a different mix of strategies from the usual translation and interpretation approaches (Williams, 2003; Moore and Grossman, 2003).

4.16 Implications for the Hasanian message semantics project

A the outset of this chapter I claimed that Hasan's semantic approach to register analysis deserves fuller exploration, testing across multiple registers, and most likely some revisions to accommodate the insights returned. I have explored the applicability of Hasan's semantic options for the characterization and explication of palliative care discourse, particularly around the issue of whether and how end-of-life issues are developed in consultations between palliative care specialists, patients and carers. Without modification, Hasan's contextually open network has provided very good coverage in bringing out relevant consistencies and patterns of divergence in the palliative care corpus. But to be maximally useful in this context I believe it would need further revision.

From my reading, Hasan has not said whether the requirement that semantic networks be 'contextually open' means that both the terms in the system and their realizations must be non-variant for all contexts. Although it seems theoretically problematic, one possibility that seems empirically worth exploring is that the terms in the system might be the same for all contexts, but the realizations are at least somewhat context-specific. In the present chapter I have illustrated this idea with possible additional realizations for options arising from the feature [confirm] within the system of DEMAND INFORMATION.

Across the palliative care corpus similar gaps have been identified in the network's coverage of items, for instance items which have functions agnate to the features [apprize] and [constrained]. There are also commonly used patterns, which might be considered variations in the way [prefaced] and [assumptive] are realized. These gaps are to be discussed in a later paper. In previous work on surgery, I suggested a similar idea, namely that in the context of surgical teamwork, the realizational possibilities for what counts as a demand for goods & services might be expanded, relative to other contexts (Moore, in press, and Moore's worked example in Lukin et al., 2011). In a similar vein, Matthiessen et al. (2005) consider the extraordinary variability in the realization patterns for offers in

the context of pizza ordering/marketing by telephone. While not using Hasan's message semantic networks as an analytical frame, some other studies argue for and demonstrate accounts in which semantic-level features mediate the contextual variation observed in a similar way, such as O'Donnell's (2001) study on the semantic feature 'realis' and tense in different news registers in English, and Caffarel (1992) on tense and time in French.

Although appealing for empirical work (for the same reasons that context-specific networks appeal), if we allow realization statements to be variable by register, this raises theoretical difficulties and implications. One issue is that this way of thinking suggests that Halliday's notion of context as the 'input' for the semantics, and semantics as 'input' for the grammar (Halliday, 1972[2003], p. 331) might be stating things too unilaterally. If the realizations of a given semantic feature vary according to context, then what counts as 'meaning x' depends on grammar in context. This suggests that semantic features might be better described as the product or output of the grammar in context, rather than the input to the grammar. Such a description of realization relations might be a better fit with the kind of data seen in this chapter. And it might fit the purposes of a model that eschews a 'one-to-one' relationship between semantics and grammar – see for instance the need to 'net in' dependencies between distal systems in message semantics, as in the case of counting certain expressions as [probe] questions in DEMAND INFORMATION, given appropriate selections from CONTINUATION.

It is important to understand that Hasan's networks do not represent isomorphic mapping between two strata, since for isomorphic mapping, the two whole systems would need to be wired in the same way, converging and diverging at the same points. Giving a realization statement for each term is *not* one-to-one system equivalence. But having said that, the options in Hasan's semantics of English do stay quite close to the options in Halliday's grammatics of English – offering only a few ways of bundling up patterns of meaning that are distributed grammatically across different parts of the system. While this is deliberate and well founded from the perspective of 'solidary relations' I feel that the message semantic categories sometimes run out of tool power for mediating or calibrating grammatical and contextual analyses at some important places. One of those places for me has been the handling of agency at the semantic level. Possibilities do not seem to be available for unifying represented and enacted agentivity, and especially for tracking agentive options in the construal of semiotic action (Moore, 2004, 2005).

In this sense the message semantic project appears to have yielded a different system of high-level semantic components from the type that Hasan called for in 1969 (Hasan, 1973). It should be noted that Hasan has also proposed the concept of 'formative motif' to handle 'solidary' combinations of message semantic features (2009b), but such motifs are not generally networked. Despite their ingenuity, it also seems difficult at this point to imagine how Hasan's system of contextually open networks could produce the robust tri-stratal descriptions achieved in her non-networked accounts of specific contexts, which for me are best exemplified by her specification of the crucial and associated semantic components in the realization of the contextual move 'Placement' in nursery tales (Hasan, 1996b).

But it is not that a networked approach cannot in principle handle such dispersed realizations of a unified semantic drift. The 'prefacing' network within Hasan's message semantics seems to my mind to offer such a tool. It handles the comprehensive integration of different ways that the grammar produces a relatively consistent semantic effect, and therefore appears to be operating at about the semantic 'level' suggested in Hasan's paper 'Code, register and social dialect' (1973). Additionally, the message semantic networks should be understood as part of a larger project to develop a rank-scale for the semantics (see Hasan, 2013; Hasan et al., 2007) so it would be wrong to dismiss the *idea* of a contextually open networked semantics on the basis of the mapping of only one rank. After all, as Hasan points out (2009, p. 65):

Surely there is a constant dialogue between theory and practice: their development is interdependent; descriptive means grow in the service of solving linguistic problems. To wait for the means to first develop is like holding back a child from taking part in linguistic interactions until s/he has 'mastered her/ his mother tongue'.

4.17 Concluding remarks

This paper has described Hasan's network-based model of message semantics and located it within Hasan's career as the central manifestation of her concern with developing functional linguistics into a workable and powerful tool for contributing to discourse analysis and sociolinguistics. The networked tool produced by Hasan is a remarkable achievement as a schematic for relating wording to meaning, and

meaning to the living of life and the differentially distributed constraints and opportunities for human flourishing. As an empirical body of work Hasan's own findings using this have enormous ongoing social and theoretical significance.

The linguistic study of palliative care reported here in small part has been conducted on a much smaller scale of ingenuity and energy (and funding!). It has not involved exhaustive semantic analysis or employed statistical tests, but it has provided initial evidence that semantic variation occurs within the context of palliative care and is likely to be a factor in how and why some people get a better palliative care experience than others. Although it identifies some problem areas, it also helps justify Hasan's demand for contextual openness in semantic networks.

The study provides further support for Hasan's claim that a networked semantics has the capacity to 'systematize' registerial variation. Hasan's approach allows us to motivate and explain semantic features and orientations that are shared by, or which mark out, distinct contexts. These motivations and explanations can be expressed in terms of relations between linguistic strata – or in other words, in terms of meaning in context. Without such contextual openness in descriptive tools, distinct contexts cannot be compared and register as a whole cannot be modelled.

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Notes

1. Hasan does not rule out context-specific modelling but appears to see it as something one does when one cannot do contextually open modelling (Hasan et al., 2007).
2. Exceptions include the work of Matthiessen and colleagues (Matthiessen, 1993; Matthiessen et al., 2008 and others) and computational approaches aligned with SFL such as Teich (2003), Steiner (2008), Neumann (2013), etc. There are also 'fellow traveller' accounts such as those of Biber.
3. The name of this feature (and several others) has changed in Hasan's model over time.
4. The rest of the question is omitted – see Lukin (2012).

5. Moore, Tuckwell, Butow, Tattersall and Clayton are completing further articles on this material. Other professions can use better question typologies, e.g., police (Hall, 2008).

6. Transcripts were also analysed for process type, agency, voice, mood, and theme (Halliday and Matthiessen, 2014).

7. According to the medical researchers, our data comprised the following 3 groups: 'EOL issues not raised' n=9, 'EOL issues raised but not discussed' n=5 and 'EOL issues raised and discussed' n=32. Total 46. However, the linguistic researchers ended up undertaking their own analysis of whether EOL issues were discussed. A finding from our research is that there is relatively poor inter-rater reliability (between disciplines) on this variable.

8. Hasan's message semantics has no internal grouping of experiential and logical meanings, hence there are four major networked semantic systems, corresponding to the experiential, logical, interpersonal and textual metafunctions.

9. 'Choice' here means the contrasts themselves, not the process of selection. But see Butt, Moore and Tuckwell (2013) and other chapters in Fontaine et al. (2013) for discussion of the complex notion of 'choice' in functional linguistics.

10. An earlier term Hasan used for this system was 'role allocation' (Hasan, 1996a).

11. This is also true for grammatical categories, for example, 'indicative' in Halliday's system (Halliday and Matthiessen, 2014).

12. For intonation see Halliday and Greaves (2008); for grammatical terms (declarative, interrogative, mood, etc.) see Halliday and Matthiessen (2014) or earlier editions.

13. NB The term 'elliptical probe' is mine. This is a non-Hasanian realization of a [probe].

14. By way of precedent, a tag is itself a kind of elliptical interrogative. Additional realization criteria could be specified using Hasan's networks for classification (experiential meaning) and continuation (which pertains to the logical function in Hasan's model, but deals with some phenomena modelled under 'exchange' elsewhere, notably Martin, 1992). There is no space to develop this point or alternative accounts, such as adding another option in [verify], or taking a 'punctuative' interpretation.

15. Note that this is a question from the patient.

16. This should be able to be handled using Hasan's 'classification' network.

17. Patterns of graduation such as 'problems – concerns – worries' were observed by Kathryn Tuckwell and are the subject of a separate joint paper in preparation.

18. Hasan has 'wired' the networks to favour semantic contrasts over grammatical ones. Thus although [ask] and [check] questions are realized through different mood selections, they are internally grouped in the DI network under the feature [enquire] partly because [ask] and [check] can each lead to the option [assumptive], whereas the options which are grammatically more similar to [check], namely [reassure] and [probe], do not constitute an environment from which [assumptive] can be chosen (see Hasan, 1996a). This is one reason why claims that Hasan's semantic networks are in a one-to-one relationship with grammatical networks are not well founded.

19. All messages discussed in this chapter are [-assumptive] unless otherwise indicated. Some are [+prefaced] without being annotated in this chapter as having that feature.

20. I use 'self-oriented [prefacing]' as a shortcut – it is not a term Hasan uses.

21. This sequence is from Consultation 2308, and will be discussed in a separate paper.

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