Exploring the Determinants of Language Barriers in Health Care (LBHC): Toward a Research Agenda for the Language Sciences

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Abstract: There is growing interest in language barriers in health care (LBHC) – interest, that is, in how the quality of health care service delivery might be compromised when patients and health care providers do not share the same first language. This article discusses LBHC as an emerging research area that provides valuable opportunities for researchers in various branches of the language sciences – including, among others, applied linguistics, theoretical linguistics, psycholinguistics, second language acquisition – to conduct basic research and to make contributions to the socially important area of medical communication. This article also proposes a research agenda aimed at attracting general language researchers to the study of LBHC, an agenda that is theory driven, programmatic, problem-solving oriented, and interdisciplinary in scope. In proposing this agenda, selected examples have been reviewed from the current literature that can serve as illustrative models for how future research into LBHC can proceed.

Keywords: health, health care, language barriers, official languages, medical communication, linguistic minorities, research agenda

Résumé : On s'intéresse de plus en plus aux barrières linguistiques dans le domaine de la santé, c'est-à-dire à la façon dont la qualité de la prestation des soins de santé peut être menacée par le fait que les patients et le personnel soignant ne partagent pas la même langue forte. L'article suggère que la question des barrières linguistiques en santé, comprise comme un nouveau champ de recherche, offre aux chercheurs des différentes branches des sciences du langage – linguistique appliquée, linguistique, psycholin-guistique et acquisition de la langue seconde, entre autres – des occasions inestimables de mener des recherches fondamentales et de contribuer à ce domaine d'importance pour la société qu'est la communication en contexte médical. L'article propose également un programme de recherche structuré sur les barrières linguistiques en santé conçu pour attirer les chercheurs qui s'intéressent au langage en général. Ce programme de recherche repose sur des

fondements théoriques, il est axé sur la résolution de problème et a une portée interdisciplinaire. Pour le mettre en valeur, des exemples tirés de la littérature actuelle sont examinés ; ils permettent d'illustrer le déroulement éventuel des recherches à venir dans le domaine des barrières linguistiques en santé.

Mots clés : santé, soins de santé, barrières linguistiques, langues officielles, communication médicale, minorités linguistiques, programme de recherche

There is growing interest worldwide in the issue of language barriers in health care (LBHC [Robinson, 2002]), especially barriers that arise when care is delivered in language-discordant situations (i.e., when patients and health care providers speak different first languages). This interest is fueled by the increasing mobility of people with diverse language backgrounds; rising concerns with meeting the health needs of societies composed of historically established linguistic minorities; sensitivity to the linguistic dimensions of the social, cultural, and psychological facets of health care; and by the commitments of governments and community organizations to provide more health care services and to improve service access. In Canada, for example, Bélanger (2003) reports that, depending on the service sought, between 62 and 74% of francophones outside Quebec do not have access to health care in French in clinics, community health centres, hospitals, or home service (see also Bouchard & Leis, 2008). Bélanger also reports that in some cases the figures are worse for Quebec anglophones living outside of Montreal. There is also the growing issue of foreign-trained medical professionals who do not speak the language of the host country fluently (Sullivan, 2005). Similar patterns are reported for other countries and, increasingly around the world, with consequences that can be serious and can occur at different levels. Hospital registration, triage, medical examination, providing informed consent, and being properly discharged from hospitals all crucially depend on how well patients and health professionals communicate with each other (for some documented examples of consequences of language barriers, see Bowen, 2001; David & Rhee, 1998).

Consequently, the role of language competence in creating barriers to health care services is now coming under greater examination among investigators from various disciplines to such an extent that, as we will argue below, one can see the gradual emergence of a relatively well-defined problem area within the broader domain of the language sciences. This area goes beyond a collection of loosely

related reports on the practical difficulties that can often arise between patients and health care providers. Rather, LBHC can and should be recognized as a broad area of research within the language sciences, one that is broader than some other areas of specialized language use, such as *pilot-air traffic controller communication* or *English for academic purposes*. Because of this domain's breadth and multifaceted nature, we argue that there are valuable research opportunities for general language scholars to become partners in the wider inter-disciplinary search for solutions to a complex social problem that significantly impacts people's daily lives and well-being.

We have structured this article as follows. First, we show how LBHC represents a broad category of communication issues within the language sciences, touching on virtually every significant aspect of human language use that might be of interest to scholars in various fields, including applied and theoretical linguistics, psycholinguistics, corpus linguistics, language development, second language (L2) peda-gogy, linguistics, sociolinguistics, and pragmatics. Second, we review selected topics to illustrate examples of current LBHC research and to point out future opportunities. Then, we discuss some of the impli-cations that the work reviewed has for practical steps to address LBHC issues. Finally, we conclude that the study of LBHC not only provides a fertile field for scholars conducting basic research on language and communication but also fosters interdisciplinary and intersectoral research with various stakeholders, thereby offering opportunities to share intellectual, financial, personnel, and institutional resources to the benefit of all participants.

LBHC as a topic area in its own right

We define language barriers in health care as *language-based* obstacles to successful communication between a patient and a health care provi-der that have consequences for health care delivery. Note, however, that there are many examples of inequities in health care delivery that might *appear* to be associated with language, but appearances can be misleading in many of these cases. For example, the health status of a linguistic minority community might be significantly differ-ent from that of the surrounding majority host community, giving the impression that language is a factor in the community's health. However, it is possible that poor health in the minority community is only superficially associated with and not causally linked to language and results instead from other demographic and socio-economic

factors. Thus, the association might simply reflect an historical accident, such as when environmental, economic, or age factors that affect health set a minority linguistic community apart from the surrounding majority community. In such cases, cultural issues – including different behavioural patterns, different propensities to use the resources available, and other cultural barriers such as those resulting from discrimination – might play a more direct role on health care than language itself. Distinguishing between when health status problems of a minority group do and do not directly reflect a language barrier can in practice be challenging because it requires sensitive assessment tools and appropriate control groups. Therefore, in order to focus specifically on language barriers, in what follows we make the simplifying assumption that the problem of separating language barriers from other potential determinants of health care has been taken into account. To further simplify matters, we focus only on health care issues that arise in language-discordant situations as these provide the most salient context for cases of LBHC to occur. Of prime interest in this article are cases in which the health care provider – physician, nurse, social worker, and so forth – speaks to the patient in the patient's first language (L1) but does so imperfectly because this is his or her second language (L2).

The emergence of LBHC as an area of concern, separate from the larger domains of health communication in general (Candlin & Candlin, 2003; Heritage & Maynard, 2006a; Todd & Fisher, 1993) and cultural competence in health care delivery (Anderson et al., 2003; Betancourt, Green, & Carrillo, 2002) of which it is a sub-field, can be seen in the literature in several ways, the most relevant here being the appearance of proposals for specific research agendas and/or frameworks for conducting research on LBHC. For example, Jacobs, Chen, Karliner, Agger-Gupta, and Mutha (2006) proposed a research agenda built around three basic questions:

- Do language barriers have important consequences for patients?
- How do effective interventions to language barriers benefit patients and providers?
- What are the costs of offering or not offering effective linguistic-access services to patients who need them?

Jacobs et al. (2006), in a systematic review to answer these three questions, reported that language barriers do indeed adversely affect patients' access to services and proposed several items for an LBHC

research agenda, including better control of confounding factors such as age, socio-economic status, degree of illness, frequency of hospital admission, and quality of outpatient care. They also proposed that guidelines be established for interpreters and for the language training of health providers (see also Lepetit & Cichocki, 2002).

Gregg and Saha (2007) provide a different framework for research in this area. They argue that treating language barriers as just 'problems of translation or "code-switching"' (p. 368) is inadequate and suggest that 'speakers are, first and foremost, social actors and that language is a symbolic resource used by speakers to make sense of the world and their place within it' (p. 369). They emphasize the dynamic nature of communication, including the use of language to express status, power, and identity. While their view is more compatible with the interests of general language researchers, it lacks the specificity that would stimulate further research from this group, resulting in missed opportunities in the LBHC research arena.

One way to avoid missing such opportunities is to place questions central to LBHC into a theoretical context that links LBHC concerns with general language issues. Once this link becomes clear, language researchers will more easily see how LBHC provides a new window through which to view language questions. In what follows, we propose a particular approach that might be helpful for thinking about LBHC in this way. We start by presenting *the conversation*, an integrating concept that can bring coherence to what might otherwise seem to be relatively disconnected elements of the proposed agenda.

The 'conversation' and LBHC

Siobhan O'Neill (2005) proposed that 'conversation is at the heart of all human relationships, and is the foundation of the physician-patient relationship' (p. 179). Jacobs et al. (2006), similarly wrote, 'The conversation between physician and patient has long been recognized to be of diagnostic import and therapeutic benefit' (p. 111). In both cases, the authors have in mind the idea that communication between patient and health professional goes beyond the simple exchange of words about symptoms, diagnosis, medications, medical procedures, and so forth, as important as these are (see also Labov & Fanshel, 1977). The main point here is that *every* normal verbal interaction that is not artificially constrained in some way involves much more than the basic exchange of facts. A useful theoretical framework for thinking about this is the *usage-based approach* to L1 and L2 acquisition (Barlow & Kemmer, 2000; Lieven & Tomasello, 2008; Tomasello, 2003).

Tomasello, for example, emphasizes two important aspects of language exchange that help shape the course of acquisition – interlocutors are engaged in creating joint attention and in reading intentions, as explained below.

Creating joint attention refers to the idea that interlocutors deliberately monitor each other and try to direct each other's attention in some way. For example, speakers use language to focus attention on particular objects or events, their properties, and the spatial, temporal, and other relationships that these objects and events have with one another, including the speaker's own perspective on the subject being discussed. *Reading intentions* refers to the idea that people in conversation are continually trying to detect each other's social intentions. For example, each interlocutor will monitor the other's speech for signals that he or she is trying to persuade, express anger, deceive, console, gain respect or friendship, assert identity, maintain or relinquish a speaking turn, and so forth. At the same time, participants will use language to achieve their own personal goals in specific ways (to persuade, deceive, and so on). Language thus becomes a major source of information about the other person's focus of attention and intentions, information conveyed in the words, expressions, and grammatical constructions chosen; in prosody; and in the use of register and register shifts in addition to information conveyed by eye gaze, hand gestures, body language, and other important vehicles of nonverbal communication. It is in the breakdown of using language to create joint attention and read intentions that language barriers in health care conversations can arise.

Based on this view, speakers' goals are about more than conveying basic, cognitive information about objects, events, and their properties. Speakers usually intend to convey their *perspective* or *construal* of a particular situation. Consider the message that a pill is to be taken every four hours. A nurse speaking to a patient might say something like 'One of these pills is to be taken every four hours,' or alternatively, 'Now, I know you must be a bit worried, but just be sure to take one of these every four hours and everything should be all right.' The first formulation is expressed in a passive voice, avoids direct mention of the patient, and fails to recognize the patient as a person with feelings, fears, and expectations. The second formulation acknowledges that patients are free agents, capable of deciding with some level of commitment what to do for their own welfare. These two messages are similar in terms of cognitive information but they differ in the social perspectives conveyed to the patient, differences that, in principle, could affect motivation to comply or appreciation

of the seriousness of the situation. Imagine, then, that a nurse intends to convey a strong social message respecting the patient as a free agent capable of making decisions but lacks the skill to convey this in the L2. This could result in a language barrier. Perhaps, in this case, only the cognitive content of the message will be properly understood, although this too could be compromised, especially with highly elaborate messages. Similarly, a language barrier could arise if the nurse does not fully understand the construals the patient intends to convey.

Thus, one way to view the matter is to see LBHC as reflecting miscommunication at the level of linguistically encoded construals and perspectives. On this view, research is needed to understand how speakers normally convey such construals and perspectives using the means put at their disposal by the language they are speaking. Research is also needed to identify the repertoire of construals and perspectives that is relevant to successful health care communication. These questions – how languages permit the encoding of construals and perspective and how they can differ – are fundamental in the language sciences and, to date, have been addressed from many different angles. Talmy (2000; 2008), for example, discusses the ways in which grammatical structure is used to direct the interlocutor's attention to convey a specific construal of the situation that is the focus of communication. This idea corresponds to the idea in usage-based theory that speakers use language to achieve joint attention. Wray (2002) discusses how formulaic or fixed expressions serve crucial functions in promoting a speaker's social agenda and psychological interests over and above the expression of the basic cognitive message. The corresponding idea in usage-based theory is that speakers use language cues to read (and convey) social intentions. In health communication, as in all communication, these two functions (creating joint attention and reading intentions) are always present in some manner or other. What makes health care communication a potentially productive setting for studying these functions is its universality and the very high stakes that may be involved in miscommunication. The importance of elaborating a systematic research agenda for LBHC becomes all the more evident. As a point of departure, three basic organizing questions are presented below: *when*, *why*, and *what*.

When do language barriers in health care arise?

There are several ways to search for the conditions under which LBHC are likely to arise. One is by informed intuition, which might suggest,

for example, looking at situations where patient-provider communication is both language discordant and involves complex messaging. Informed intuition can certainly lead to interesting case studies and possibly yield some generalizable conclusions. While informed intuition may be a good way to jump-start research to LBHC, a more methodical approach would be more useful. One possibility is to record many different patient-provider language-discordant encounters and to compare the unfolding of communication and its outcomes with appropriately matched language-concordant encounters (control condition). The challenge here is controlling for language-external variables to ensure content validity. It would also be desirable to conduct this research in authentic settings (hospitals, clinics), yet this can be challenging for logistical and ethical reasons.

A more systematic alternative could be to consult the participants themselves – providers and patients – in a rigorous way. A recent study using this approach (Isaacs, Laurier, Turner, & Segalowitz, 2011) focused on communicative activities involving French-English bilingual nurses in Quebec using their L2 to communicate with patients. The study used a mixed-methods, qualitative-quantitative approach. An early step was to identify a fairly comprehensive list of communicative activities in which nurses and patients typically engage. For this, the authors drew up a preliminary list using input from a small focus group of nurses, resulting in a final, narrowed-down list of 19 speech activities with items such as giving directions over the phone, managing a patient's anger, and informing a patient of bad news. The authors then presented the 19 items to a larger sample of nurses ($n = 133$), who typically talked to patients in their own L1 and L2 in the course of their work. Nurses were asked to rate the level of L2 competence needed for each activity. They were also asked to rate their own ability to handle each activity in their L2 as well as their own general proficiency in the language. The data were submitted to Rasch analysis (Blais, Laurier, & Rousseau, 2009) to assess the degree of agreement among the nurses on communicative task difficulty and to order the tasks on a difficulty scale, taking into account the nurses' self-reported L2 abilities and ability to handle the tasks. Subsequently, the results were submitted to exploratory and confirmatory factor analyses that enabled the researchers to reduce the 19 speech activities into a smaller set of categories ordered by difficulty and to calibrate them onto the Canadian Language Benchmarks band descriptors, a scale used in Canada to guide the integration of newcomers into the workforce. Thus, it became possible to identify a set of communicative activities that vary in a measurable way in their

vulnerability to language barriers. Of course, much more research is needed, including replication with other participants (e.g., patients, physicians, mental health workers), in different language contexts (other languages, languages with different socio-political relationships to each other), and in contexts involving different health issues. Some general research documenting the impact of language barriers on patient satisfaction has been reported in the literature (for language-discordant contexts see Carrasquillo, Orav, Brennan, & Burstin, 1999; Jacobs et al., 2006; for language-concordant contexts, see Cegala et al., 2008; Ong, de Haes, Hoos, & Lammes, 1995). However, to our knowledge, little is known regarding the mapping of patient satisfaction and health outcomes onto specific language barriers that might be differentiated along a scale of communicative difficulty. The message here is twofold. First, language barriers can exist in many different settings defined by language, health domain, specific speech activity, and speaker ability in the languages concerned; the relative importance of each factor in contributing to LBHC phenomena needs to be studied carefully. Second, because there are many different ways these factors can combine with each other, the area of LBHC can yield an enormously rich and varied set of research settings for developing language-assessment and evaluation tools of interest both to general language scholars and to those concerned with LBHC. A major priority for research on LBHC could, therefore, be to define as rigorously as possible (in terms of assessing validity and reliability) the speech situations likely to give rise to LBHC.

A third and related way of discovering cases of LBHC is to search guided by theory. For example, research could be conducted by following hypotheses derived from the usage-based theory of language development described above. From the perspective of this theory, certain features of language – specifically, those important for creating and maintaining joint attention and for facilitating intention reading – should prove to be important for communicative success. If these features are more difficult to handle in the L2, then language barriers may arise. Such hypotheses can be tested in health communication situations, thereby contributing to an understanding of LBHC and allowing for testing of general psycholinguistic hypotheses about L2 versus L1 processing.

The three approaches to discovering when language barriers in health care are likely to be encountered described above need to take into account an important caveat. Any language-discordant communicative activity is likely to yield some significant language phenomena indicating weaker skills in the L2 than the L1, which can range from

slower speech rate to the incorrect use of important constructions. However, such phenomena may or may not actually create a barrier to health care; slowed speech, for example, could in principle have little or no impact on quality of care. For this reason, it is important to establish clear criteria for defining what constitutes a *meaningful* barrier to health care. Some suggestions have already appeared in the literature. For example, in reviewing the possible language barriers in health care experienced by linguistic minorities in Canada, Bélanger (2003), Bowen (2001), and O'Neil (1989) identified possible consequences of delivering health care services in language-discordant situations. Apart from outright misunderstandings and errors in diagnosis, health care providers may possibly communicate less empathy to the patient because they lack the necessary linguistic skills. Furthermore, patient examination may be more mechanical and perfunctory because the language barrier blocks deeper questioning; instructions to the patient may be incompletely understood; and patients may be hospitalized significantly longer than necessary or discharged significantly earlier than is appropriate because of poor communication and reduced information about the patient's true state. These and similar consequences might serve as evidence that in a given situation there tends to be a language barrier that carries with it meaningful consequences for a patient's health care and overall well-being and quality of life.

In summary, a research agenda for LBHC should include the following goals:

- Establish systematic discovery procedures for determining when language barriers with consequences for health care are likely to occur;
- Set criteria for defining what distinguishes a *language* barrier from a *non-language* barrier (i.e., criteria for controlling for potential confounds); and
- Formulate criteria for distinguishing language-related phenomena that *do* constitute a barrier from language-related phenomena that *do not*.

Why do language barriers arise?

Suppose that a patient finds him- or herself in a language-discordant situation with a health care provider. Why – by what mechanism or process – does language discordance become a language barrier? A

general answer to this question might be that language discordance tends to disrupt communication flow, compromising the special patient-provider conversation discussed earlier (O'Neill, 2005). How, then, is conversational flow disrupted? There are at least two ways to address this question: by investigating the *dynamics* of patient-provider conversations as they unfold and by examining potential *semantic* barriers that could lead to the incomplete or incorrect understanding of what the participants are trying to say.

Conversational dynamics

Studying the underlying tacit, interpersonal dynamics of language-*con*cordant health communication can provide a baseline against which to examine how these dynamics change when the encounter becomes language discordant. Fortunately, there exists a substantial literature on the dynamics of language-concordant health communication (see Heritage & Maynard, 2006b, for an excellent summary and overview; also Gajo, 2004; Thompson, 2001). Generally, three types of research techniques have been used to study the dynamics of communication in language-concordant contexts: process analysis, microanalysis, and conversational analysis. As Heritage and Maynard point out, each of these has its strengths and weaknesses and, in this respect, the two approaches are complementary. However, as far as we can tell, there has been virtually no systematic application of these techniques to the study of LBHC in language-*dis*cordant situations. These three approaches are briefly described next.

Process analysis is an approach pursued in recent years chiefly by Roter (Roter, Hall, & Katz, 1988; Roter & McNeilis, 2003). Roter has developed an instrument known as the Roter Interactional Analysis System (RIAS [Roter, 2000]; Roter & Larson, 2002). The 2000 version of the RIAS Manual contains a set of communicative interaction categories that are reflected in speech – 15 items related to socio-emotional exchange (e.g., shows disapproval, makes legitimizing statements), 24 items related to task-focused exchange (e.g., gives information or asks open- or closed-ended questions in various subcategories related to medical conditions, therapeutic regimen, lifestyle information, and so forth), and in a later version, 12 Likert-type 7-point scale items related to global affect. The elements targeted by this analysis are relatively fine-grained insofar as the communicative categories to which they refer are carried by specific expressions and constructions. Although process analysis has not yet been used to study language-discordant situations, one can see the benefits of

using it if it is able to identify which elements of the interactional dynamics of communication are adversely affected by use of an L2.

Micro-analysis refers to a category of approaches that is more qualitative than process analysis. Micro-analysis uses ethnographic methods to investigate patient experiences, power relationships between doctor and patient, and other tacit aspects of the doctor-patient relationship. As Heritage and Maynard (2006b, p. 5) suggest, process analysis (e.g., Roter's work) focuses on what is present in the patient-provider conversation, whereas micro-analysis focuses on what is absent. As a consequence, the analysis targets relatively large elements of communication, such as power relationships between speakers. Roberts, Moss, Wass, Sarangi, and Jones (2005) and Wodak (2006) provide examples of such qualitative work. Wodak, for example, studied language-concordant medical encounters from participants' perspectives through extensive interviews conducted over an extended period, exposing categories of doctor-patient dynamics reflecting, for example, the different ways in which doctors exercise power over patients and gender differences in the reporting of pain. While the details are not important here, the point of interest is that this approach, which has for the most part been conducted in language-concordant situations, could also have implications for health care communication in language-discordant situations. This is because language discordance might change the way interaction dynamics unfold, possibly compromising the quality of care. An advantage claimed for micro-analysis is that, unlike process analysis, it takes into account the actual context and meaning of the communication. A potential disadvantage is that, although the data are rich in information, the highly qualitative nature of the data makes it difficult to combine results from other studies in complex statistical analyses.

Conversational analysis refers to a set of techniques derived from the work of Goffman (1955) and Sacks, Schegloff, and Jefferson (1974), research concerned with sequencing and turn taking in conversation and to applications of this work to medical communication (e.g., West, 2006). For example, West used conversational analysis to study communication closings between doctor and patient – that is, how they signal to one another that a conversation has ended. Clearly, how closings are handled can have an impact on the quality of patients' experience with a doctor, affecting whether they felt that sufficient time was given, that their concerns were fully heard, that they were treated with appropriate respect, and so forth. Analyses of this type have not yet been conducted in language-discordant situations, but in general one would expect that turn taking and sequencing, including

conversation closing, could pose challenges to many L2 users. This is because the routines that one normally uses in the L1 (e.g., fixed expressions or normal back-and-forth exchanges that precede closing a conversation) may not be fully available to L2 speakers. Of course, conversational turn taking, sequencing, and closing may also involve cross-cultural dimensions that may or may not interact with language in a given case (e.g., even monolingual English native speakers from different parts of the world may have discordant patterns despite speaking the 'same' language). Again, one must be cautious about whether observed communication barriers truly reflect language barriers as such or other non-linguistic cultural differences.

In summary, the literature reveals at least three approaches to studying conversational dynamics in health care contexts. They differ from one another in terms of the methods employed and units of analysis. All three are appropriate for studying problems related to LBHC because there already exists a general health care communication literature using these methods.

Semantic barriers

A second way to investigate why language barriers might arise in language-discordant settings is to look at the cross-language semantic differences that might be implicated. Here, linguistic and psycholinguistic approaches may provide useful insight into potential barriers. Three examples are described below to illustrate some possibilities.

The first example concerns pain. Pain is interesting because, being a profoundly private experience, it poses serious challenges to anyone wishing to talk about it, whether in the L1 or L2 (Ehlich, 1985). Moreover, pain has a social dimension and, therefore, is subject to cultural variation in its expression and in issues concerning its legitimacy and stigma. All of these considerations are reflected in the way people talk about pain (Craig, 2009; Hadjistavropoulos, Craig, & Fuchs-Lacelle, 2004; Rollman, 2004; Sim & Smith, 2004). For purposes of medical diagnosis, Melzack (1975) drew up an inventory of more than 70 English words normally used to describe pain (e.g., 'pulsing,' 'shooting,' 'piercing') for the McGill Pain Questionnaire (MPQ). The success of the MPQ has inspired many to translate it into other languages (see, for example, Boureau, Luu, & Doubrère, 1992, for four different French language versions). While these inventory studies have not been driven by linguistic or psycholinguistic approaches, they have led researchers to develop factor-analytic and related techniques (e.g., discriminant analysis, multidimensional

scaling) to discover cross-language similarities and differences in how words and their translation 'equivalents' are used (e.g., Dubuisson & Melzack, 1976; Fernandez & Boyle, 2001; Janal, 1995). These techniques hold much promise, not only for studying how languages differ in how pain descriptors are used, but also for studying how language is used to represent other highly subjective experiences relevant to health.

In a different study, Halliday (1998) provided a systemic-functional grammar analysis of English pain expressions, showing that reference to pain can take on different grammatical forms. For example, pain can be referred to as a thing ('an ache in my stomach'), a process ('my stomach aches'), or a quality ('my stomach is sore'). The selection of a particular grammatical form can vary for communicative purposes, and it is also likely that these forms will be found with different frequency distributions in different languages, although to date there is little research on this topic. Because pain is represented in language in special ways, it needs to be distinguished from other topics that come up in health care communication (e.g., cardiovascular disease, obesity); here, language sciences can certainly make a special contribution.

There are very few comprehensive *linguistic* studies of how people communicate about their experience of pain. One exception is Lascaratou (2007), who reports a major study of how Greek allows its speakers to construe pain (πόνος [*ponos*]). She collected a corpus of authentic Greek conversations during ongoing physiotherapy sessions between patients and health care professionals about past and currently experienced pain and used Halliday's (1998) framework to analyze how language can represent pain (focusing on Greek and English). An important idea underlying Lascaratou's work is that the choice of linguistic form to express pain – e.g., a verb form for pain as a process residing in the body of the individual, a noun form for pain as a participant, or an adjective form for pain as a quality, among others – reflects 'the degree of *involvement of the sufferer's whole self* in the painful experience' (p. 184; emphasis added). She argues further that verb forms predominate in Greek speakers' discussion of pain because verbs offer 'a more direct and social processual framing of pain' (p. 184). This approach, according to Lascaratou, is echoed in Wierzbicka's (1992) work on emotions and language, which argues that Russian tends to express emotions through verbs. Lascaratou's analyses are interesting for studies of LBHC for two reasons. First, they shed light on cross-language differences in how pain is represented at the conceptual and semantic levels and communicated through language. Second, her analyses open up new ways of comparing how a given speaker communicates pain using the less

well-mastered L2 as opposed to the more fluent L1. For example, one might ask, do health care providers using their L2 tend to miss the deeper meaning of patients' messages about pain due, possibly, to emotional distancing in the L2 (as discussed by Pavlenko, 2006)? When this happens, does it create a language barrier and, if so, how does this affect patients' emotional and mental status?

This brings us to the second example. Wierzbicka (2008) has argued that cultures can be characterized by different linguistic scripts underlying the meanings of certain concepts that are said to be key to understanding aspects of the culture. Of special relevance to LBHC is Wierzbicka's (2006, 2008) approach to such English words as *fairness*, *mind*, *personal*, *privacy*, *probably*, *reasonable*, and *truth*, among others. Wierzbicka points out that these words have meanings that are rather unique to the English speaking community when viewed from a certain perspective. She proposes that underlying each English word is a cultural script, one that can be written in terms of a universal vocabulary of about 65 or so semantic 'primitives' (e.g., *after*, *because*, *do*, *good*, *I*, *not*, *say*, *think*, *this*, *you*) that make up a natural semantic metalanguage (NSM). Wierzbicka uses this NSM to construct the scripts that underlie the meanings of more complex words; often these scripts are unique to a specific language. Wierzbicka (2006) notes, for example, that English has a relatively large number words for the meanings associated with *probably* (e.g., *allegedly*, *certainly*, *evidently*, *likely*, *possibly*, *reportedly*), each conveying a slightly different nuance of certainty/ uncertainty and the speaker's stance with respect to that certainty/ uncertainty (e.g., does the speaker *know* the information or simply *believe* it, or has the speaker only heard about it but otherwise has no firm opinion).

In contrast, Wierzbicka claims that the corresponding French epistemic adverbs do not map onto the same range of meanings in the same way as does English, and hence speakers cannot simply resort to exact translations to convey the same nuanced meanings. Such differences could have implications for language-discordant health care communication, for example, in activities such as *obtaining informed consent* (Schenker, Wang, Selig, Ng, & Fernandez, 2007) or *giving bad news* (Gillotti, Thompson, & McNeilis, 2002). In these activities, the physician has to explain risks and benefits while making clear the degree of uncertainty of possible outcomes without misleading or unduly alarming the patient. In using the L2, the physician may not be able to handle all the subtleties of meaning to which native speakers would be sensitive, resulting in miscommunication with possibly serious consequences.

In summary, the reasons for language barriers in health care arising in language-discordant situations can be investigated using a variety of techniques. All of these focus on two functions of conversation: the establishment of joint attention and the reading of intentions. These aspects of communication are reflected in language in several ways, and the research techniques for examining them include, but are not limited to, the following:

- Techniques to analyze the dynamics of conversation, including process analysis, micro-analysis, and conversational analysis; and
- Techniques to analyze potential semantic barriers – semantic mismatches between two speakers' languages and between a given speaker's L2 and L1 – including linguistic approaches using lexico-grammatical functional analysis, cognitive semantics, NMS, and psycholinguistic approaches using factor analysis, multidimensional scaling, and other cognitive psychological techniques.

We turn now to the third question for a research agenda to study LBHC: What can one do about language barriers to avoid and overcome them?

What can be done about LBHC?

Health care practitioners have long had to deal with language barriers (Lavizzo-Mourey, 2007; Schyve, 2007). There is also general recognition that patients are vulnerable when they are ill and that is why sensitive, empathic communication is a necessary part of good health care (Ferguson & Candib, 2002). As Pettey (1987) put it in the memorable title of her report on problems in delivering mental health services to French L1 speakers who also speak L2 English, « Quand je suis malade, je ne suis pas bilingue » (*When I am sick, I am not bilingual*). When people are vulnerable, it is important to speak to them in their L1.

Often, attempts to overcome communicative barriers are improvised on the spot – say, by calling in a family member (often the patient's child), a hospital staffer, or some other person in the area who happens to speak the patient's language to serve as an interpreter. The downside of this approach is that these individuals may not be suitable, and it may even be ethically indefensible to entrust them with responsibility for a patient's health. Increasingly, hospitals are

turning to trained interpreters (Fernandez & Schenker, 2010). While this has many advantages, interpreters are both expensive and not always available when needed. Moreover, it is usually not practical to use interpreters for long-term chronic care.

Another solution has been to offer health professionals basic language courses and/or training in cultural competence to help them deal with the populations they most often encounter (Ferguson, 2008; Fernandez et al., 2004). For the purpose of the present discussion, we focus on just one approach – the training of health care professionals in the language of their patients. This approach should be seen as complementary to other approaches and not as a replacement for them. The advantage of looking at language training in the context of elaborating a research agenda for LBHC is that language training is one of the most developed areas of applied linguistics and potentially a fruitful arena for research in LBHC and L2 training. Another advantage is that in some jurisdictions many of the health care providers will already have some basic (or more advanced) knowledge of the target L2 through instruction in elementary and high school. For example, in Canada most people speak one official language – English or French – as their L1 and have studied the other as an L2 in school and thus have at least some latent knowledge of that language. This might be a potential resource that could be harnessed for training health care providers interacting with patients in the other official language. Similarly, in the United States many people have a rudimentary knowledge of Spanish as an L2, and so again, this might be a latent resource to capitalize upon.

It must be recognized, however, that language training for overcoming language barriers faces several challenges. There are practically no published needs analyses addressing in detail the specific language needs of health care providers. Whereas an Internet search does yield a few textbooks with titles such as *Language X for Health Care Professionals*, these appear to be course materials focusing on vocabulary related to health care and basic medical expressions, providing very little on some of the more subtle communicative issues discussed above. Another challenge is that doctors, nurses, and many other health care professionals do not have the time conventionally devoted to formal language instruction (several full semesters) or to the maintenance of L2 skills. All of these challenges provide interesting opportunities for research.

There are many different approaches to L2 instruction and a review of the potential research issues associated with each is beyond the scope of this article. However, some overarching

considerations apply to all research on language training for health care providers. The principal goal of research on language instruction for these learners would be to create teaching modules that successfully help them develop appropriate levels of fluency in specially targeted work-related communicative activities. The targeted activities would presumably be those identified in research of the sort discussed in the *When* section above (e.g., giving bad news; discussing pain). A research agenda for studying LBHC with a focus on the L2 training of health care providers could include the following:

- Investigate how to re-create targeted communicative activities (e.g., giving bad news) in the classroom while maintaining the authenticity of communication (see, e.g., Gatbonton & Segalowitz, 2005, on authentic communication in language learning).
- Identify what language skills need to be learned – perhaps particular vocabulary items, formulaic expressions and idioms, mastery of key semantic nuances. For this, it would be useful to develop a large corpus of health care communication (Adolphs, Brown, Carter, Crawford, & Sahota, 2004; Atkins & Harvey, 2010). A challenge here, however, is that authentic corpora – taken from real conversations between patients and providers in real health care settings – are difficult to obtain, and standard corpora, such as the British National Corpus (2007), contain health related data as only a small fraction of the entire corpus. An interesting research goal might be, therefore, to develop ways of obtaining large corpora of speech focused on health care topics by creating activities that are designed to elicit appropriate speech from informants outside clinical settings.
- Establish an operational definition of what 'appropriate levels of fluency' should mean in the context of studying LBHC. As there are many ways to study fluency (Segalowitz, 2010), it is important to investigate which measures are most appropriate for the intended learning goals.
- Develop training modules that promote specific skills efficiently to address the fact that health professionals have limited time. Related to this would be research aimed at developing modules for L2 retention, possibly with the help of computer-assisted language learning systems (e.g., Walker, Trofimovich, Cedergren, & Gatbonton, 2011) that can be

accessed ad lib and remotely. Such modules would provide opportunities to test general hypotheses about instructed language learning.

Toward a research agenda for studying LBHC

The agenda we propose aims to have the following characteristics. It should be (1) driven by theory, perhaps by the usage-based theory of language; (2) programmatic rather than encouraging isolated, stand-alone pieces of research; (3) problem-solving oriented and focused on finding practical solutions for overcoming language barriers; and (4) interdisciplinary, providing opportunities for research on language in general, above and beyond issues specifically related to health care. Table 1 summarizes the main questions and proposed research targets discussed above that make up this agenda. The table also indicates methodological issues in the study of LBHC that presently need close attention. In this final section we wish to reinforce and comment upon the four crucial features of the research agenda.

First, the agenda should be theory driven. The theoretical perspective of a usage-based approach to language acquisition was highlighted here; however, as research in LBHC grows, other theoretical perspectives and research techniques will likely come to the fore, generating debate as they compete with each other.

Second, the research agenda should be programmatic. There should be a sense of direction in the selection of problems to investigate. We identified questions related to why health care communication can break down and why barriers can arise when communication takes place in a language-discordant context. The idea here is that, with the accumulation of research results on the features of communication identified above, recurrent patterns will emerge and a more overarching understanding of barriers will come into focus. The programmatic nature of the proposed agenda lies in its goal of tying together research on how to best predict the occurrence of LBHC with an investigation of why barriers do indeed arise. An advantage of a programmatic agenda is that one can build into it a place for basic research on language and communication (for example, the study of cross-language differences in the expression of emotion or the role of formulaic language in communication).

Third, the research program should be problem-solving oriented. This feature complements the theory-driven aspect of the proposed agenda. A problem-solving orientation is important for several reasons apart from the benefit of helping to create more equitable access to health care. A

TABLE 1
Some key questions and selected targets for a research agenda for studies of language barriers in health care (LBHC)

Overarching LBHC research questions	Some proposed key LBHC research activities
When do problems of LBHC arise?	• Elaborate a theoretical basis for anticipating/understanding LBHC cases • Establish discovery procedures to identify LBHC cases (e.g., questionnaires for patients or care providers; focus groups; observational techniques) • Establish an inventory of key language-discordant situations likely to give rise to language barriers
Why do problems of LBHC arise?	• Investigate conversational dynamics (using process analysis, micro-analysis, conversational analysis, etc.) • Study the nature of semantic barriers from the perspectives of theoretical and applied linguistics (e.g., using systemic functional grammar and related approaches, cognitive semantics, natural language semantics, corpus linguistics, etc.), psycholinguistics, and cognitive psychology
What can be done to overcome problems of LBHC?	• Develop L2 teaching modules for health professionals and include the following steps: • Investigate ways to re-create targeted communicative activities (e.g., giving bad news) in the classroom while maintaining communicative authenticity • Identify precisely what language skills are to be learned and create an archived speech corpus for researchers to analyze and as a research resource for developing language training materials • Set criteria for target levels of fluency to be achieved • Develop training modules that work rapidly and modules that can be used for L2 retention, including the use of computer-aided language learning systems

TABLE 1 continued

Overarching LBHC research questions	Some proposed key LBHC research activities
Which methodological challenges facing research on LBHC presently need to be resolved?	• Differentiate language barriers from other barriers (i.e., control for cultural, demographic, educational, historical, political, socio-economic status, and other confounds often associated with language) • Differentiate language phenomena that constitute barriers from those that do not constitute barriers • Foster collaborative research by including participants (patients and health care providers) and researchers from the language sciences (including linguists, applied linguists, psycholinguists, clinical psychologists, cultural anthropologists, cross-cultural specialists)

Note: This list is not intended to be exhaustive.

problem-solving orientation will enable researchers to test theoretical predictions in natural contexts (hospitals, clinics). A focus on addressing an immediately felt social problem will provide a strong *raison d'être* for conducting basic research into LBHC and, one hopes, thereby make it easier to obtain the resources and cooperation needed for research. Finally, research that targets language training for health professionals can open up valuable opportunities for investigating new pedagogical developments in L2 acquisition theory. There are, of course, numerous other directions that could be pursued that were not discussed here. For example, there could be interesting opportunities for researchers from the general language sciences for the training of medical interpreters (Hsieh, 2006), special categories of health workers trained to address language and other barriers (Bill, Hock-Long, Mesure, Bryer, & Zambrano, 2009), and for health literacy (e.g., Martinez, 2008).

Finally, the research agenda needs to be interdisciplinary. No one branch of linguistics, applied linguistics, or psycholinguistics can be the principal source of answers to questions in LBHC (Abrams, 2006). The very nature of health care delivery and the complexity of the issues involved in LBHC require the participation of multiple disciplines and of stakeholders as well – patients, health care professionals, administrators, and policy makers. This is a prime case of the need for what Van de Ven (2007) calls *engaged scholarship*. A basic premise of engaged scholarship is that researchers can make more

penetrating and insightful advances in science and practice by obtaining the perspectives of relevant stakeholders in problem formulation, theory building, research design, and problem solving than when they perform these research activities alone. This point emphasizes the need for collaboration, not only with scholars in other academic fields, but also with stakeholders as they can play an especially significant role in problem definition, which is key to problem solving. We hope that as a research agenda for LBHC takes shape and continues to evolve, scholars from different branches of the language sciences will invest their wealth of knowledge in their respective areas to respond to the increasing opportunities to contribute to understanding and overcoming language barriers in health care.

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