

Phonetics and talk-in-interaction

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ABSTRACT

The natural home of spoken language is social interaction and linguistic (phonetic) resources are systematically deployed in its management. However, despite the advent of large databases of ‘spontaneous speech’ and an increasing acknowledgement of the relevance of phonetic detail for speech perception and understanding, the organisation of the phonetics of talk-in-interaction and their interactional consequences remains largely unexplored. The challenge of explicating the phonetics of talk-in-interaction has recently been taken up by researchers who have brought together, in an innovative fashion, phonetic analytic techniques and the interactional sequential-analytic techniques of Conversation Analysis. One research goal is to elaborate a ‘phonology of talk-in-interaction’. This work has begun to document systematically the ways in which speakers and listeners manipulate fine phonetic detail and phonetic variability in producing and interpreting the moment-to-moment flow of everyday conversation.

1. INTRODUCTION

The advent of large speech databases has yielded dramatic increases in quantitative information about aspects of speech and speech production in connected speech. However, we still know surprisingly little in detail about the phonetic characteristics of naturally occurring talk-in-interaction and about the ways in which ordinary people *use* the phonetic resources of language in everyday talk to undertake interactional tasks (e.g. handling turn-transition and entry to and exit from talk; configuring their talk as a continuation of some prior, abandoned talk or as a new departure; showing that are now correcting some trouble in prior talk; signalling that they are willing to yield a turn-at-talk, treating some talk, which overlaps their own, as interruptive but other overlapping talk as supportive).

Talk-in-interaction relies on complex, highly structured, rule-governed behaviour of a semiotic richness that stands in sharp contrast to the minimalist approach to the description of speech in spoken language favoured by recent generations of linguists and phoneticians [1]. A key aspect of this richness is that information relevant to the identity of ‘units of speech’ and to pragmatic intent more generally, is distributed *and* embedded in sequences of turns-at-talk. This richness poses an interesting challenge

for the researcher concerned to explicate the intricacies of the phonetics of talk-in-interaction. Because the phonetic design of such talk is sensitive to the unfolding sequential organisation and the ongoing interactional activities its analysis requires techniques which also involve a thorough-going explication of interactional structure.

2. THE INTERACTIONAL-PHONETICS ENTERPRISE

This paper provides a brief overview of research on the phonetics of talk-in-interaction (sometimes dubbed ‘interactional-phonetics’). It describes some of its emerging results, some of its methodological and theoretical concerns and illustrates some of the ways it differs from other contemporary work on the phonetics of connected speech.

The interaction-phonetics enterprise seeks to develop an interactionally-grounded analysis of the phonetics of everyday talk and to provide a basis for grounding the description of the functioning of phonetic parameters in the observed behaviour of participants in naturally occurring spoken interaction. To do this researchers have brought together detailed auditory and acoustic phonetic analysis and the rigorously empirical methodology of Conversation Analysis (CA). In consequence this work differs from many other approaches to the functioning of phonetic parameters in speech in four theoretically important respects:

- the data derives *entirely* from naturally occurring talk-in-interaction interaction;
- the approach is one which seeks to locate and identify specific interactional activities and to state the general phonetic parameters which speakers use to accomplish them;
- the CA-informed methodology takes it as axiomatic that it should be interactional categories which provide the basis for the analysis and such categories must be arrived at from, and grounded in, the data. These categories must be shown to be relevant to the participants in their talk and not be derived ultimately from the analyst’s intuitions as a speaker of the language under analysis;
- the approach demands that the analysis prejudices as little as possible the relevance of particular phonetic details and particular phonetic parameters.

3. CONVERSATION ANALYSIS

The methodological approach to the analysis of interactive categories referred to in Section 2 has been developed by workers in ethnomethodological discipline of Conversation Analysis. They have demonstrated by careful sequential analysis of interaction that participants display, in their language behaviour, systematic orientation to features of the talk and that this systematicity provides a basis for (the analysis of) interactional categories [2], [3], [4]. It has not been the primary concern of these analysts to state the linguistic/phonetic exponents of their categories — a task which falls naturally to linguists and phoneticians rather than sociologists. Their main concern has been to explicate the competencies social participants draw upon in producing, understanding and co-ordinating interactional behaviour.

In addressing these issues Conversation Analysis has maintained a rigorously empirical approach to analysis. First, it has required that any analytic claims about social interaction be validated by, tied to, and grounded in the observable behaviour of participants in the interaction. Second, it has also insisted on the importance of ‘sequential’ analysis of interaction. The actions which are embedded in conversation take place in sequences of turns-at-talk, they occupy particular positions within sequences and their sequential position is a crucial determinant how such actions are structured, understood and dealt with by co-participants in conversation. The organisation of everyday talk is such that it proceeds on a negotiated turn-by-turn basis. One consequence of this organisation is that any next turn provides an opportunity for its producer to display an understanding or analysis of the prior turn. This is an important resource not only for participants themselves but also for analysts trying to make sense of how talk is functioning. It is an analytic resource for explicating ‘what a turn’s talk is occupied with’ [4: 728]. CA thus has methodological implications the study of spoken language in that it provides an interactionally-grounded approach to analysis which can help liberate analysts from traditional reliance on their own intuitions (or the intuitions of others).

4. A METHODOLOGICAL IMPERATIVE

One of the more distinctive aspect of interactional-phonetic work is the emphasis on the need to pursue a formal interactional analysis hand-in-hand with phonetic analysis and not simply as some ‘optional extra’. One important benefit of this approach is that it enables the analyst to establish structural ‘sameness’ and to compare ‘like with like’ both phonetically *and* interactionally.

When researchers in interactional-phonetics attempt to warrant analytic claims about the phonetic details of talk in and through the observable features of data we frequently use the term ‘participant orientations’. The analysis proposed of how some interactional activity such as, say, turn-transition is structured and what phonetic resources

are mobilised in its accomplishment is intended to be commensurate with a participant’s analysis. Thus, where a claim is made that, for example, a particular articulatory or prosodic parameter is an important element in the structuring of a particular type of turn transition, the analysis seeks to provide evidence that participants themselves treat it, or ‘orient to’ it, as important. The evidence can take a variety of forms. For instance, it can include

- showing that a particular cluster of phonetic features is routinely incorporated in the speech of those completing a particular type of turn-ending and that after they have produced this cluster of features they stop talking;
- showing that on no occasion after a speaker-change has occurred does the first speaker give any indication in the course of their subsequent talk that the first turn was anything other than complete; nowhere after the production of the proposed turn-final features is there, for instance, talk done by first speaker in overlap with a second speaker which could display that they had not finished talking but had more to say that had been cut short or interrupted by a second speaker beginning to talk;
- showing that participants are monitoring on-going talk for the features and that, for instance, they time their incomings exactly after the occurrence of these of features. Or that when these features are absent turn-transition does not occur; or if turn-transition does occur in the absence of these features it is marked in some way as being ‘out of place’ or unoccasioned.

In undertaking these kinds of analysis the search for evidence of participant orientations may involve the analyst in protracted examination of small fragments of data. The claim that such an analysis is more than a purely analytic construct but reproduces and explicates the bases of participants’ understandings is a strong one. In view of this, the painstaking approach to interactional structure becomes understandable not as a matter of whim or indulgence but as one of absolute technical analytic necessity.

Extensive examination and analysis of data from talk-in-interaction challenges a number of conventional assumptions about the kinds of phonetic detail which are routinely produced and attended to in generating interactional understandings. Four key results emerge from the interactional-phonetic enterprise which are central to an understanding of the organisation and interactional functioning of phonetic detail in everyday talk.

- the phonetic detail of everyday talk is thoroughly saturated by and shaped by ongoing interactional activities;
- each part of the speech signal relates to several functions simultaneously;

- some systematic differences in phonetic detail are relatively localised in the speech signal, others stretch over several syllables;
- phonetic detail simultaneously provides interactional, grammatical and lexical information.

These findings pose a challenge for the interpretation of phonetic data which arises from circumstances other than naturally occurring talk-in-interaction. For example it is not at all clear whether findings from talk produced under a variety of experimental conditions (e.g. read material, ‘map task’-type talk, role-play, topic/activity-directed ‘spontaneous’ talk/dialogue) can be used to explain the phonetic detail and variability of the kind found in naturally-occurring talk. Though experimental work is undoubtedly valuable in addressing particular kinds of questions, and may help generate working hypotheses, it cannot replace the actually occurring lived reality of talk-in-interaction [4]. Its emphasis on generating controlled and balanced data-sets necessarily restricts the range, consequentiality and accountability of the speech produced. [4], [5].

5. SYSTEMATIC PHONETIC DETAIL AND TALK-IN-INTERACTION

One central outcome of Conversation Analysis research has been the finding that ‘no order of detail can be dismissed, a priori, as disorderly, accidental or irrelevant’ [5]. Work on the analysis of everyday talk has demonstrated that this is particularly true in the phonetic domain [6]. The phonetic design (particularly its patterns of variation) of talk-in-interaction is one of the orderly ‘details’ of interaction. It provides a resource which speakers use to accomplish social action and guide its interpretation.

Interactional-phonetic work has begun to document some of the ways that participants in talk systematically manipulate, and orient to, phonetic detail — encompassing rhythm, tempo, loudness, pitch, voice quality, and independent articulatory parameters — in order to structure and interpret contributions to interaction. By examining the sequential structure of talk and explicating the phonetics of interactional practices in the natural everyday contexts in which those practices occur, interactional-phonetic research has shown how different combinations of segmental and prosodic phonetic parameters are systematically used to shape the beginnings, continuations, restarts and endings of turns and the interactional relevance of other stretches of talk [7], [8], [9], [10], [11], [12]. It has demonstrated, for example, that speakers make strategic use of tempo changes in combination with particular articulatory and phonatory parameters preceding silence to indicate whether or not they are going to yield their turn [13]; that turn-increments which share interactional functions (such as *assessing* the prior talk) share phonetic properties, involving features of loudness, tempo, voice quality and pitch (e.g. pitch-accent matching the host-turn but with higher overall pitch) [14]; that different

interactional consequences follow depending on whether articulatory and/or laryngeal (e.g. glottal closure) is held or not during intra-turn periods of no talk (‘silences’) [13]; that speakers exercise precise systematic control over the timing of articulatory and phonatory features and the configuration of prosodic features around places of self-repair [15], [16] and in showing that they are returning to previously abandoned prior talk [17]; that in collaboratively completing another speaker’s turn-at-talk speakers can entrain the rate, rhythm, timing and also pitch range and loudness characteristics of their speech to that which has just been produced by the other speaker [18]; that speakers systematically manipulate a specific combination of rhythmic, loudness and pitch parameters to display whether overlapping speech is designed to be turn-competitive and interruptive (arhythmic, loud and high-pitched) or not [19]; that speakers select different vowel qualities (monophthong/diphthong), pitch and phonatory parameters to distinguish news-receipts (‘oh’) which are produced in response to out-of-the-blue informings as compared those which follow question-solicited informings [20], and that the fine temporal phonetic detail of the production of aspiration and phonation can signal turn transition [21].

Phonetic parameters such as pitch, rhythm, phonation on one hand, and vocalic and consonantal quality on the other have been traditionally allocated to different, independent phonological systems (prosodic, segmental). One theoretically interesting result of interactional-phonetic work is the demonstration that in structuring their talk-in-interaction speakers systematically draw on bundles of phonetic features which cut across this traditional classification. This suggests that phonetic parameters are best treated as falling into functional clusters, irrespective of their ‘prosodic’ or ‘segmental’ characteristics, on the basis of how speakers deploy them to achieve particular interactional goals. If this is done, it becomes possible to document systematically the ways in which speakers and listeners manipulate phonetic parameters in managing the moment-to-moment flow and interpretation of ordinary conversation.

6. CONCLUSION

As well as trying to understand how talk-in-interaction works and how particular phonetic features operate in its constitution, researchers in interactional-phonetics are also interested in reconfiguring understanding of the conventional categories of description employed linguistic-phonetics and phonology. Results indicate that *a priori* assumptions about the putative importance or otherwise of particular phonetic parameters and what their function(s) might be are extremely dangerous. It takes serious interactional and phonetic analysis to show not only that something is there and systematic, but that it is also relevant to the participants. When (or indeed if) we wish to say things about the work that fine phonetic detail does in talk, interactional-phonetic work indicates that it is crucial to start with a sequentially grounded account of action. By

doing this we can begin to reconfigure our understanding of the constitutive elements of phonetics and phonology and begin to explicate in a serious fashion the different systems of phonological contrast which operate at different places in sequential organisation. Such an approach should significantly enhance our ability to give a cogent account of the polysystemic and multistructural linguistic constitution of talk-in-interaction and of phonetic in detail in particular.

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