What we want to explore in this paper are the consequences for phonological theory of the analysis of language in its most natural setting, that is, interaction. We will show that at least some aspects of the phonetic design of turns at talk are sensitive to the talk of others. We don't mean this in the sense that speakers attune their talk to aspects of their environment, such as location of the other speaker, background noise, or imputed shared understandings. Rather than that, we will show that some aspects of talk can affect the way a turn at talk is understood by a co-participant. In this way, some aspects of 'meaning' are a social accomplishment; but more importantly, some aspects of phonetic design are reliant on social interaction.

The main ways that phonology has been related to meaning are are follows:

1. The lexicon/lexical item has been accorded a primary role in phonological theories
2. The exploration of form/function relations is a central issue in much work on intonation and focus, most usually relying on invented examples (e.g. Ward & Hirschberg 1985, Pierrehumbert & Hirschberg 1990, Cruttenden 1997)

3. So-called segmental variation is frequently related to effects such as frequency, word class or accommodation by the speaker to the hearer.
4. So-called prosodic parameters can convey 'paralinguistic' meaning (Laver 1994, Ladd 1996, Gussenhoven 2002), but this is generally seen as outside of phonology proper
5. Indexical meanings (Ochs 1996) such social identity (e.g. Docherty & Foulkes 2000), social acts and activities, affective and epistemic stance, can all be marked phonetically.

Much of this research raises some difficulties for phonological theory:

1. Definitions and motivations for labels, especially 'paralinguistic' and 'indexical' meanings, are very rarely warranted empirically and indeed may not be empirically warrantable (c.f. Crystal 1967)
2. Phonology typically assumes discrete categories which may not be the ones most appropriate to the analysis of unscripted talk
3. 'Meaning' is treated as static; phonetic patterns are expected to have relatively straightforward mappings to meaning, and these mappings are available to native speakers with the minimum of context. Talk in its most natural context is treated as derived and *a priori* is

assumed to be unorderly. The result is that the single, embodied individual is accorded primacy, leaving out socially negotiated forms of meaning.

There are two issues that we'd like to try to address:

1. We will ground our analysis in categories and sequences which are motivated by participants' orientation to them, and so provide a more empirical warrant for 'paralinguistic' and 'indexical' meanings. This is the *elaboration of context*.
2. We aim to provide an account of communication as a social accomplishment, which trades on the relation between speaker and hearer. Talk in interaction exhibits features of *recipient design*, and we'd like to explore its implications for our understanding of the language faculty more generally.

We see this stance as one which is compatible with psycho- and neuro-linguistically motivated theories of language in which phonetic detail is important; and in which the language faculty is constantly updated, is multi-dimensional, in which categoriality is emergent, linguistic knowledge can also be procedural and susceptible to influence from the environment, such as models proposed by Bybee (2001) or Hawkins (2003). It also builds on work in social psychology, which claims that mind emerges in

the joint mediated activity of people. Mind is co-constructed and distributed (Cole 1996).

2 Assessment sequences **1 MIN**

Expressing agreement is a prime example of an inherently social activity. The data for this paper are taken from a sequential structure of everyday talk where agreement or disagreement with a stance proposed in a prior turn is the main action. When one speaker makes an assessment, a second assessment conveying agreement or disagreement with the first assessment is made relevant. What are the resources that conversationalists have at their disposal to convey agreement and disagreement with a first assessment?

In the conversation analytic literature, attention has focused on three main issues in the design of assessments. These are (1) lexical resources, (2) preference organisation and (3) questions of epistemic access, which I won't have time to explore in this paper.

Pomerantz (1984) shows how lexical resources are used in second assessments to convey agreement or disagreement with the first assessment. These are summarised inTable 1. Agreement of various strengths can be conveyed by tuning the choice of assessment term to that of the first assessment.

Strong agreement is conveyed by upgrading the assessment term; strong disagreement by using an opposite or contrasting term. Assessments can also be classed as 'same' assessments or downgraded assesments.

The preferred responsive action to a first assessment is agreement. 'Preference' is used in the technical sense of Sacks (1986): a preferred action is a normative one, and a dispreferred action is accountable. Preference has consequences for the way that sequences of talk are built.

Preferred actions are conveyed through whole turns at talk. They are timed to come immediately after the prior turn. Dispreferred actions are delayed in a variety of ways. In assessments, one common way to delay disagreement is to build a turn that projects first agreement, then disagreement.

In this paper, we will focus on displays of agreement of two different kinds.

3 Data **1 MIN**

Section 3 describes the data used. There are approximately 100 assessment pairs in our collection. It consists of assessment pairs where the second assessment contains an overt assessment term such as *I like sitting in the window — Oh I hate*

it! The phonetic analysis concentrates on the shape of the second assessment relative to the first.

4 Two forms of agreement **7-10 MINS**

We'll concentrate on two kinds of agreement, and show that sequentially and interactionally different forms of agreement with different status in terms of preference organisation have systematically different phonetic characteristics.

4.1 STRONG AGREEMENT

Section 4.1.1 on the handout summarises the general organisation of strong agreement sequences. Fragments (1)-(3) exemplify the normal structure of these sequences. The turns arrowed 2→ have upgraded lexical assessment terms relative to the first assessment, marked 1→. If strong agreement is accomplished by lexical 'upgrade', then one question is whether upgrade is accomplished just lexically, or whether it has phonetic implications as well.

Let's look at Fragment (1). Beth is telling Alice about when her parents came to visit her while she was in Germany. She sent them off to see a famous castle in the area. In the first assessment, the pronoun *it* refers to this castle. The first assessment is receipted by a second assessment which lexically upgrades the first.

The first assessment has rather level pitch, as you can see in Figure 1. The second assessment has more dynamic pitch, with a rise-fall contour on *gorgeous*. It also uses a wider pitch span and has a change to creaky voice at the end. The articulatory seetting of the first assessment is more open than the second. For instance, compare *supposed to* which has labial approximation in the first assessment but closure in the second assessment. The velar closure portion for *gorgeous* is 225ms long and has voicing in the early part of the closure. The rate of articulation is slower: 6.6 syll/sec as opposed to 9.5 sylls/sec in the first assessment.

The phonetic characteristics of strong agreements are summarised in section 4.1.3 of the Handout. Typically, a second assessment which conveys strong agreement is louder than the first assessment; has an expanded pitch span; is higher in the speaker's range; is slower; and has closer, tenser articulations. The second assessment turn has what I will informally call 'upgraded' phonetics relative to the first assessment.

4.2 Weak or same agreement that prefaces disagreement

Pomerantz notes that disagreements are often prefaced by agreements, which delays the action of disagreement. These

second assessment turns which present token agreement contrast with strong agreements in a number of ways. Firstly, their lexis provides no more than a 'same' assessment as the first, but often a weaker assessment. Secondly, having delivered token agreement, the speaker continues at some early opportunity to produce a turn which contains a disagreement. These are marked with 3→ in fragments (4)-(6) on the handout.

Phonetically, these second assessments are 'downgraded' as compared to the first asssessments. They have a narrower pitch span; they are regularly faster than the first assessment; they are done with more open articulations; they are produced low in the speaker's pitch range.

Fragment 4 contains an example of the [agree + disagree] format. Beth and Alice are talking about the difficulties of finding accommodation for the autumn term during the summer vacation. Alice is American, which presents her with particular problems. Her first assessment is built as a syntactic continuation of Beth's immediately prior turn. In the second assessment, Beth presents a 'same' assessment to Alice's first assessment. Her next action, at the third arrowed turn, is to provide counter-evidence for the assessment she has just given.

The second assessment is produced at 7.7 sylls/sec, faster than the first assessment, which is done at 4.7 sylls/sec. The pitch span is narrower. The articulatory setting is more open: note that while the first assessment has several V-initial words which are done with glottal stop, and a lengthened lateral in *lot*, in the second assessment, the articulations are relatively more open and all are faster. So relative to the first assessment, the second assessment comes off as 'downgraded' phonetically.

So here we have a case where a turn is designed to do token agreement which prefaces a disagreement. Thus the turn projects a dispreferred action, and it has downgraded phonetics, in contrast to strong agreement, where the phonetic design is relatively 'upgraded' and the action—agreement—is preferred.

5 Phonetic exponents of 'agreement' **3 MINS**

What the data show is that there is no one way in which speakers display agreement. However, displays of agreement are finely tuned to sequential and interactional organisation. 'Upgrading' seems to be the phonetic correlate (or exponent) or doing a preferred action in a turn, while 'downgraded' phonetics goes around with a turn that projects the dispreferred action of disagreement. So we can associate

phonetic parameters with interaction types rather than e.g. speaker 'involvement' or 'attitude'.

Note that relativity is important. The pitch span, for example, does not by itself 'mean' either 'strong agreement' or 'upcoming disagreement'. But in context, pitch span is one of the phonetic parameters used to index agreement. It's also worth pointing out that agreement is conveyed through a variety of resources, with lexis, relative pitch span, relative tempo, relative loudness and relative tightness of articulation all contributing.

But the main point is that the linguistic and phonetic resources used to convey agreement are tuned to the talk of another, and cannot be stated independent of sequential context. This context is one that is demonstrably shared and created by co-participants.

Fragment 7 provides an example where we can show that phonetic parameters alone can be enough to project disagreement.

2→ is a fitted, type-conforming response to the interrogative at 1→ (Raymond, 2000; Heritage & Raymond 2002). The second assessment turn does a display of agreement by being lexically

and morphosyntactically fitted to the immediately prior turn which is its first pair part. It is lexically upgraded and comes in soon. By being fitted in this way, the turn is hearable as an appropriate second pair part to the first assessment. However the turn is the first part of a turn with the [agree + disagree] format, and has phonetic properties like those described under Section 4.2: narrower pitch span (1→ 8 st, 2→ 6 st), lower in the speaker's range, quieter and faster. While the turn *displays* agreement, it *projects dis*agreement, which is conveyed through phonetic downgrading and through the rest of Freddy's extended turn. So this example shows that phonetic resources alone can be enough to project upcoming disagreement in a turn that displays agreement.

Let's summarise what we have found and its implications.

- Some phonetic details are sequentially sensitive. These details may attend *inter alia* to issues of turn-taking (REFS), sequence organisation (REFS) or, in this case, social activities. If such details are mediated through phonology, then the grammar must
  1 attend to the flow of talk in time
  2 monitor others' talk not just for content but for its form

3 it must contain units which allow for the construction of for orderliness in talk, including notions such as 'turn' and 'sequence'

- The statement of the phonetic exponents of a second assessment is made with relation to a prior turn. This highlights the unfolding of talk in time. Cf. Bybee (2001: 8): grammatical knowledge is also procedural knowledge, knowledge about how to build and interpret talk.
- The phonetic design of at least some turns at talk is shown in part to depend on the talk of another. Speakers design their talk for recipients. This recipiency design has implications for how a turn is treated and understood by another. The phonetic design of a turn can override the propositional content of a turn.

This is different from the more general claims of e.g. H&H theory, which is centred around the tension between an individual's need to be informative, and so speak clearly, and to do as little as possible, and so speak more sloppily. Our point is that some of the kinds of phenomena subsumed under categories like 'hyper' and 'hypo' actually convey meaning and are not just the result of speakers' struggle to balance effort and communication.

More generally, the data we have shown—along with other data, such as turn-taking, the management of repair, the co-

construction of turns at talk—provide persuasive evidence that the phonological component of the grammar is responsive to and in some ways dependent on the exigencies of talking in interaction. Aspects of the grammar which are rooted in the individual are necessary, but are not sufficient to build amodel of shared meanings and understandings.