Distributed Morphology

Homophony and the structure of the lexicon

1 How much homophony? How do we decide?

(1) Three issues that need to be distinguished

- *The AI Problem*: Simulation of human intelligence without regard to whether the model proposed matches the computational methods used by humans (weak equivalence).
- *The Linguist's Problem*: Using insufficient/indeterminate data, figuring out which grammar a human acquires.
- *The Human's Problem*: Acquiring the grammar determined by UG + Experience.

2 Accidental Homophony

(2)
- English *well/well, night/knight, red/read*
- Italian *sono* 'I am' and 'they are'
- English NOUN PLURAL/POSSESSIVE/3RD SINGULAR

3 Phonological Homophony

(3) Phonological analysis

a. *One-to-many mappings*: Deriving surface distinctions from identical inputs—context sensitive processes.

b. *Many-to-one-mappings*: Demonstrating that identical surface strings can correspond to underlyingly distinct representations—neutralization processes (phonologically-based homophony

(4) Assimilation of *-r* to coronal sonorant under complex conditions (Reiss 1994)

	'home'	'stone'	'wagon'	'sky'	'friend'
NOM	/heim-r/ → *heimr*	/stein-r/ →*steinn*	/vagn-r/ →*vagn*	/himin-r/ →*himinn*	/vin-r/ →*vinr*
ACC	/heim-∅/ →*heim*	/stein-∅/ →*stein*	/vagn-∅/ →*vagn*	/himin-∅/ →*himin*	/vin-∅/ →*vin*

4 Morphological Homophony or Vagueness?

(5) Morphological analysis

a. *One-to-many mappings*: Deriving surface distinctions from identical inputs

- suppletion
- different concatenations: Hungarian *hajó-k* 'boats' *hajó-i-m* 'my boats'

b. *Many-to-one-mappings*: Demonstrating that identical surface strings can correspond to underlyingly distinct featural representations, or alternatively, demonstrating that the inputs are actually identical—the problem of **morphological homophony**

(6) Morphological relationships in Old Icelandic

	SING	PLUR
NOM	*heimr*	*heimar*
GEN	*heims*	*heima*
DAT	*heimi*	*heimum*
ACC	*heim*	*heima*

	SING	PLUR
NOM	*skip*	*skip*
GEN	*skips*	*skipa*
DAT	*skipi*	*skipum*
ACC	*skip*	*skip*

Is there one *skip* or two (or four)? Does the STRING *skip* correspond to one VAGUE representation, or is it AMBIGUOUS and thus correspond to two representations that happen to be homophonous?

5 Two logical extremes

(7) Radical underspecification/vagueness:
you-[2 SG NOM], *you*-[2 DU NOM], *you*-[2 PL NOM], *you*-[2 SG OBJ], *you*-[2 DU OBJ], *you*-[2 PL OBJ], *etc.* ⇒ *you*-[2]

There is no homophony (other than that which can be derived phonologically). In a given language, a single underlying phonological representation (input to the phonology, UR) Σ corresponds to a single morphosyntactic feature description which subsumes the description of all the morphosyntactic environments in which Σ can appear.

(8) Radical homophony/ambiguity:
you-[2 SG NOM]≠*you*-[2 DU NOM]≠*you*-[2 PL NOM]≠ *you*-[2 SG OBJ]≠*you*-[2 DU OBJ]≠*you*-[2 PL OBJ]

If there are n morphosyntactic contexts in which a string Σ appears which can be distinguished using the set of all morphosyntactic features provided by Universal Grammar, then Σ is n-ways ambiguous; that is, Σ corresponds to n (listed or derived) lexical items.

6 Arguments for the necessity of (interesting) homophony

(9) First argument for ambiguity: Blocking of productive morphology

There *must* be a lexical item '*sheep* [PLURAL]' in order to block the productive process of plural formation from generating **sheeps*.

(10) Second argument: identical subsumption structures in Old French 'wall'

	NOM	OBL
SING	murs	mur
PLUR	mur	murs

(11) Third argument for ambiguity:
fly:flew vs. fly:flied: ring:rang vs. ring:ringed, etc.

6.1 A more complex fourth argument: 'Lexical splits' (Toivonen, 2000)

(12) (a) *Pekka näkee hänen ystävä-nsä.*
P. sees his/her friend-3Px
'Pekka sees his/her friend.'

(b) **Pekka näkee hänen ystävän.*
P. sees his/her friend.ACC
'Pekka sees his/her friend.'

(c) *Pekka näkee pojan ystävän.*
P. sees boy.GEN friend.ACC
'P. sees the boy's friend.'

(d) **Pekka näkee pojan ystävä-nsä.*
P. sees boy.GEN friend-3Px

(e) *Minä annan koira-lle sen ruokaa.*
I give dog.ALL it.GEN food
'I give the dog its food.'

(f) **Minä annan koira-lle sen ruokaa-nsa.*
I give dog.ALL it.GEN food-3Px

(13) (a) *Hän näkee ystävä-nsä.*
He sees friend-3Px
'He$_i$ sees his$_i$ friend.'

(b) *Poika näkee ystävä-nsä.*
boy sees friend-3Px
'The boy$_i$ sees his$_i$ friend.'

(c) *Se heiluttaa häntää-nsä.*
it wiggles tail-3Px
'It$_i$ wiggles its$_i$ tail.'

(14) Features of agreement marker *-nsa/nsä*

$$\begin{bmatrix} \text{HUMAN} \\ \text{3rd} \\ \text{PRONOUN AGREEMENT} \end{bmatrix}$$

(15) Features of pronominal suffix *-nsa/nsä*

$$\begin{bmatrix} \text{PRED} \\ \text{SUBJECT ANTECEDENT} \\ \text{3rd} \end{bmatrix}$$

The surface form *-nsa/nsä* is thus ambiguous. It is possible to list, say, a disjunctive statement of where the putative 'vocabulary item' *-nsa/nsä* is inserted. However, this is equivalent to listing two separate items.

(16) We must conclude that there is at least some homophony that is more interesting than *knight vs. night* and *vagn*-NOM *vs. vagn*-ACC. In other words we can reject Radical Vagueness.

7 Solving the *Linguist's Problem* using external evidence

(17) Rejecting (Almost) Radical Ambiguity

The errors that SLA learners make may reflect aspects of the L_1. Consider the following (impressionistic) observations: speakers of language like Hungarian, which do not distinguish gender in third person pronouns make many errors in using English *he/she*, whereas English speakers do not appear to have a problem learning *not* to be able to distinguish the genders. If Hungarian *ő* corresponded to two separate representations, one [3 SG MASC] and another [3 SG FEM], we might expect the mapping to the English system to be easier than it apparently is. Similarly, English speakers have a hard time learning to make the DUAL / PLURAL contrast, so this may indicate that this distinction has been collapsed in English grammars. In other words, we can reject the idea—(Almost) Radical Ambiguity—that no collapse of initial full specification occurs.

(18) Rejecting Maximal Collapse—(close to Radical Vagueness) the idea that whatever can be collapsed is

English speakers have no problem learning distinctions like the French *tu / vous* contrast. This is evidence that distinctions that are made anywhere in the language, such as SINGULAR *vs.* PLURAL, are maintained in representations. This is incompatible with the proposal of maximal collapse—no string other than *you* occurs in the context of [2nd person], so why not just posit one *you*?