Syncretism: An overview

Andrew Murphy

andrew.murphy@uchicago.edu

1   What is syncretism?

- Two kinds of morphology: inflection vs. derivation.
- Broadly speaking:
  - Derivation creates new words.
  - Inflection creates different forms of the same word.

- The primary role of inflection is to express morphosyntactic distinctions.

(1)   a.   I like ramen.   d.   They like ramen.
       b.   Y'all like ramen.   e.   We like ramen.
       c.   He/she/it likes ramen.   f.   You like ramen.

- From a design perspective, each semantically-relevant morphosyntactic distinction should be signalled by a unique form.

(2)

	singular	plural
1st person	*I*	*we*
2nd person	*you*	*y'all*
3rd person	*he/she/it*	*they*

- However, this is not what we find. Frequently, two differing feature combinations are realized by the **same** form.

(3)

	singular	plural			singular	plural
1st person	*like*	*like*		1st person	-Ø	-Ø
2nd person	*like*	*like*	⁓→	2nd person	-Ø	-Ø
3rd person	*likes*	*like*		3rd person	-s	-Ø

- The lack of a particular distinction is what is called *syncretism*.

> **── Syncretism ──**
>
> The use of the same form across distinct morphosyntactic contexts.

- Syncretism poses a *prima facie* challenge for any theory of inflectional morphology.

2   Theories of inflectional morphology

> **── Question ──**
>
> What should a theory of inflectional morphology look like?

Stump (2001: §1) proposes the following taxonomy:

(4)

	incremental	**realizational**
lexical	Minimalist Morphology (Wunderlich and Fabri 1995)	Distributed Morphology (Halle and Marantz 1993)
inferential	Articulated Morphology (Steele 1995)	Paradigm Function Morphology (Stump 2001)

Incremental vs. Realizational

- In an *incremental* theory, the inflected form of a word (lexeme) only acquires those features by virtue of its inflection.
- In a *realizational* theory, the lexeme is already associated with these features, and the job of inflection is to express (or realize) them.
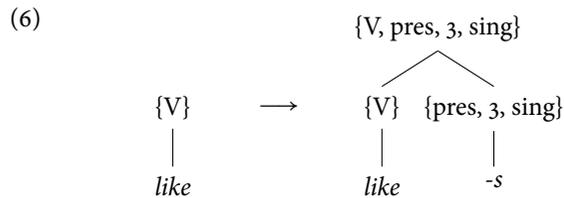
Lexical vs. inferential

- In a *lexical* theory, the morphological inflection (e.g. the affixes added) are lexical items in their own right.
- In an *inferential* theory, morphemes do not have this status. Instead, the relation between a base or root form and the inflected form is derived (or 'inferred') by rules or constraints.

2.1 A lexical-incremental approach

- Let us consider how to do English present tense inflection in a lexical-incremental theory such as Lieber (1992).

  (5) a. The root of *like* is associated with the category feature V: LIKE$_{[V]}$
  b. The suffix *-s* is associated with the features for tense and agreement: *-s*$_{[\text{PRES, 3, SING}]}$

- The these two elements are combined by rules of morphology:

  (6)

2.2 An inferential-incremental approach

- In an inferential-incremental approach, the word only acquires features by virtue of inflection.
- However, being inferential, it would also have to reject the idea of lexically-stored morphemes (i.e. there is no unit *-s* in the grammar).
- In principle, one can countenance a rule that takes a root and simulatenously adds both an inflectional marker and the features associated with that marker.

  (7) LIKE $\longrightarrow$ *likes*$_{\{3,sg,pres\}}$

- Is there a contradiction here? If incremental means 'morphemes contribute contextual features' but inferential means 'there are no lexically-stored morphemes'?

2.3 A lexical-realizational approach

- The most well-known lexical-realization approach is Distributed Morphology.
- In DM, complex inflected word forms are built by rules of syntax.
- This is done by forming a complex head into which exponents are inserted:

  (8)
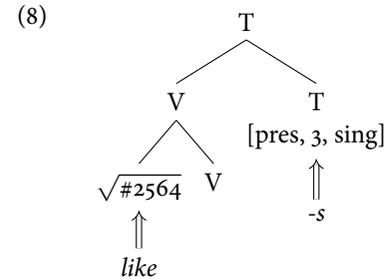
- This is therefore a *realizational* approach. The morphosyntactic context (the features) are already present independent of inflection (unlike in incremental approaches).
- Furthermore, it is *lexical* because morphemes such as *-s* have an independent status in the theory.

2.4 An inferential-realizational approach

- An example of an inferential-realization approach is A-Morphous Morphology (Anderson 1992) or Paradigm Function Morphology (Stump 2001).
- In this theory, lexemes are paired with full morphosyntactic context (inflection is not information-increasing), but morphemes have no special status.
- Instead, a base is linked to its inflected forms by mapping rules.

  (9) $\langle$LIKE, $\{$3,sg,pres$\}\rangle \longrightarrow$ *likes*

- Morphemes, as such, do not exist in this kind of theory. Instead, they are included as part of the inflectional rules of the grammar.

  (10) $\langle$X, $\{$3,sg,pres$\}\rangle \longrightarrow$ X*s*, where X is a verb.

2.5 Arguments for realizational over incremental approaches

2.5.1 Extended exponence

- Stump (2001) argues that cases of so-called 'extended exponence' are problematic for incremental approaches.
- He discusses an example from Nyanja:

  (11) ci-lombo   ci-kula
       CLASS:7-weed CONCORDIAL:7-grow
       'A weed grows.'

(12) ci-manga   ca-bwino
CLASS:7-maize QUALIFYING:7-good
'good maize'

(13) ci-pewa   ca-ci-kulu
CLASS:7-hat QUALIFYING:7-CONCORDIAL:7-large
'a large hat'

- Why is this data potentially problematic for an incremental approach?

2.5.2 Underdetermination of context

- Another of Stump's criticisms of incremental approaches pertains to paradigms such as the following from Sora (Stewart and Stump 2007: 389):

(14) *Singular affirmative paradigm for Sora* de *'get up'*:

	Nonpast	Past
1st person	de-te-n-ay	de-le-n-ay
2nd person	de-te-n	de-le-n
3rd person	de-te-n	de-le-n

NB: -*n* is a conjungation class marker

- Why is this a potential challenge for an incremental theory?

Aside

What kind of assumptions about syntax are incremental theories (in)compatible with?

2.6 Lexical-realizational vs. inferential-realizational

2.6.1 Arguments for inferential approaches?

(15) *Stump's argument #1:*
There is no theoretically significant difference between concatenative and nonconcatenative inflection.

- In the case of suppletive morphology, e.g. English *give* (pres.) vs. *gave* (past).
- How does it compete with the -*ed* suffix?
- Halle and Marantz (1993) assume there is a null suffix past tense suffix -Ø tied to a phonological 'readjustment rule' (/ɪ/ → /eɪ/).

- Stump's criticism: Non-concatenative morphology is widespread, why should there always be a conspiracy between null suffixation and phonological readjustment?

(16) *Stump's argument #2:*
Exponence is the only association between inflectional markings and morphosyntactic properties.

- His criticism of non-inferential approaches here is that there is an analytical ambiguity.
- The Bulgarian 1sg present tense form of 'give' is *dávam*. In a morpheme-based theory, is -*m* a marker of 1SG in the context of present tense, or does it also realize present tense?
- 'Lexical theories demand that a choice be made, but the choice is inevitably an arbitrary one'.

2.6.2 Arguments for lexical approaches?

- What are the arguments in favour of morpheme-based approaches to inflection?

(17) *Argument #1: Mirror Principle effects*
The order of morphemes reflects the syntactic hierarchy of projections.

- For example, imagine we have good reason to think that tense is universally higher than aspect syntactically:

(18) [$_{TP}$ T [(…) [$_{AspP}$ Asp …

- In English, we see this with auxiliaries/modals:

(19) a. I wouldn't have said this.   (tense < aspect)
     b. I didn't have said this.   (tense < aspect)

- In many languages with inflectional marking on the verb, we also find that aspect is closer to the root than tense, e.g. Greek:

(20) a. agáp-is-a
        love-PERF.ACT-PST.IND
        'I loved.'
     b. agap-íthik-a
        love-PERF.NONACT-PST.IND
        'I was loved.'
     c. agap-ié-me
        love-IMPF.NONACT-PRES.IND
        'I am being loved.'

- If this is a robust correlation, then this would speak for an approach where morphemes are 'assembled' according to syntactic hierarchy. This would be purely accidental in an inferential approach.

(21) *Argument #2: Locality effects*:
Intervening morphemes block allomorphic conditioning.

(22) *Kayardild pronuns* (Moskal and Smith 2016):

	SG	DUAL	PL
NOM	nga-da	nga-rr-a	nga-l-da
OBL	ngiju-wa	nga-rr(a)-wa	nga-la-wa

- It seems that root suppletion in the oblique is blocked by an intervening number morpheme.
- This has been argued to motivate a more general condition on allomorphy (linear adjacency condition for the conditioning morpheme).
- If there are no morphemes, then this generalization is no longer tenable.

3 Theoretical approaches to syncretism

3.1 Underspecification

- The classic approach to syncretism, going back to at least Jakobson (1962) and Bierwisch (1967), is to treat syncretic cells as a *natural classes*.

(23) *Polish wh-forms*

	'who'	'what'
NOM	kto	co
ACC	kogo	co
GEN	kogo	czego

- To do this, we have to decompose complex like NOMINATIVE into other features:

(24) a. NOM = [+governed,−oblique]
    b. ACC = [+governed,−oblique]
    c. GEN = [−governed,+oblique]
    d. DAT = [−governed,+oblique]

- What is the analysis for each of the Polish wh-forms in (23)?

(25) *Elsewhere Principle/Panini's Principle*:
More specific rules take precedence over more general rules.

Now let's consider the following pronoun forms in Albanian demonstrative 'this (NOM)'

(26)

	singular	plural
masculine	ky	këta
feminine	kjo	këto
neuter	ky	këto

- Sometimes feature decomposition can be independently motivated. Is this always the case?

(27) *Singular case inflection in Russian nouns* (Müller 2004):

	$zavod_m$ ('factory')	$komnat_f$ ('room')	$tetrad'_f$ ('notebook')	$mest_n$ ('place')
NOM	zavod-Ø	komnat-a	tetrad'-Ø	mest-o
ACC	zavod-Ø	komnat-u	tetrad'-Ø	mest-o
DAT	zavod-u	komnat-e	tetrad'-i	mest-u
GEN	zavod-a	komnat-y	tetrad'-i	mest-a
INST	zavod-om	komnat-oj(u)	tetrad'-ju	mest-om
LOC	zavod-e	komnat-e	tetrad'-i	mest-e

- What syncretisms do we find?

(28) *Morphemic analysis of Russian singular noun inflection*:

	I	II	III	IV
NOM	-Ø	-a	-Ø	-o
ACC	-Ø	-u	-Ø	-o
DAT	-u	-e	-i	-u
GEN	-a	-i	-i	-a
INST	-om	-oj	-ju	-om
LOC	-e	-e	-i	-e

- What is the analytical issue here when analyzing the distribution of *-i* as a single marker?

3.2 Elsewhere

- Not all syncretism can be reduced to natural classes. Take this Hindi data:

(29)

'boy' (MASC)	singular	plural
NOM	laDk-aa	laDk-e
OBL	laDk-e	laDk-õ

(30)

'big' (MASC)	singular	plural
NOM	baD-aa	baD-e
OBL	baD-e	baD-e

- Consider now this data from Nehan, exhibiting polarity:
- What is the problem for an analysis based on natural classes?
- How does the notion of a default/elsewhere help?
- Now, consider this data from Nehan articles (Baerman 2007):

(31)

'the'	class I	class II
SG	a	o
PL	o	a

(32)

'a'	class I	class II
SG	me	mo
PL	mo	me

- Why is this pattern even more challenging?

3.3 Impoverishment

- There are examples of syncretic patterns that appear to be systematic:

(33) *Person/number marking in pronouns in Burarra* (Baerman et al. 2005):

	singular	dual	plural
1st	ngu-	nyiburr-	nyirri-
2nd	nyi-	nyiburr-	nyirri-
3rd	(a-)	aburr-	(a)birri-

- What would an underspecification analysis of this syncretism look like?
- What important fact does it miss?
- Instead, we can assume a more general *impoverishment* rule that removes the distinction between 1st and 2nd persons in both the dual and the plural.
- What would this look like? What else do we need to assume about the syncretic forms?
- This kind of meta-syncretism can also be *transparadigmatic*:

(34) *Gender markers in Khinalug* (Corbett 1991):

	Series 1		Series 2		Series 3	
	SG	PL	SG	PL	SG	PL
I	Ø	b-	j	v-	h-	f-
II	z-	b-	z-	v-	s-	f-
III	b-	Ø	v-	j-	f-	h-
IV	Ø	Ø	j-	j-	h-	h-

3.4 Rules of referral

- An alternative approach to syncretism involves *rules of referral* (Zwicky 1985).

- This can capture the metasyncretism in Burarra:

(35)   In non-singular contexts, the 1st person has the same form as the 2nd person.

- Another argument from Stump (1993: 452f.) based on Macedonian:

(36) *Present/past inflection for Macedonian* padn- *('to fall')*:

	present				imperfect				aorist		
		I	II	III		I	II	III		I	II	III
1SG	padn			-am	padn	-e	-v		padn	-a	-v	
2SG	padn	-e		-š	padn	-e		-še	padn	-a		
3SG	padn	-e			padn	-e		-še	padn	-a		
1PL	padn	-e		-me	padn	-e	-v	-me	padn	-a	-v	-me
2PL	padn	-e		-te	padn	-e	-v	-te	padn	-a	-v	-te
3PL	padn			-at	padn	-e		-a	padn	-a		-a

- Stump's point: 2SG and 3SG syncretism is captured by referral, not underspecification.
- Consider the following partial analysis (focussing on the middle paradigm):

(37)   Slot II:
   a.   [+past, 'non-third person'] ↔ -v
   b.   elsewhere ↔ -Ø

(38)   Slot III:
   a.   [3rd person, −plural, +impf] ↔ še
   b.   [1st person, −plural] ↔ me
   c.   [2nd person, +plural] ↔ te
   d.   [3nd person, +plural] ↔ a

(39)   *Rule of referral*:
   In past tenses, the second person singular has the same form as the third person singular.

- What about this alternative? Assuming (40) instead of a rule of referral:

(40)   a.   Slot II: [2nd, −pl, +past] ↔ Ø
   b.   Slot III:
      (i)   [1st, −pl, +impf] ↔ Ø
      (ii)   [−pl, +impf] ↔ -še

- Another problematic case: Bidirectional syncretism (Baerman 2004)

(41) *Syncretism in Bonan nominal case inflection*:

	noun 'foliage'	pronoun 'he'
NOM	labčoŋ-Ø	ndžaŋ-Ø
GEN	lačoŋ-ne	ndžaŋ-ne
ACC	labčoŋ-ne	ndžaŋ-de
DAT	labčoŋ-de	ndžaŋ-de
ABL	labčoŋ-se	ndžaŋ-se
INSTR	labčoŋ-Gale	ndžaŋ-Gale

- What is the challenge for an underspecification or an impoverishment analysis?
- How would a rule of referral help here?

4 Some issues in morphological analysis

4.1 Subanalysis

- The complexity of our morphological analysis often depends on more basic analytic choices about how many morphemes we have.
- This is not always trivial. Consider the following German data:

(42) *Past/present paradigm for regular German* glauben *('to believe')*:

	present	past
1SG	glaube	glaubte
2SG	glaubst	glaubtest
3SG	glaubt	glaubte
1PL	glauben	glaubten
2PL	glaubt	glaubtet
3PL	glauben	glaubten

- What are the possible analyses for verbal inflection that we could give here?
- Sometimes even complex cases can be decomposed:

(43) *German irregular* sein *('to be') in present tense*:

	singular	plural
1st person	bin	sind
2nd person	bist	seid
3rd person	ist	sind

(44) *Radical subanalysis of German irregular* sein (Pike 1965):

	A	B	C	D	E	
1SG	b		ɪ	n		*bin*
2SG	b		ɪ	s	t	*bist*
3SG			ɪ	s	t	*ist*
1PL	z		ɪ	n	t	*sind*
2PL	z	a	ɪ		t	*seid*
3PL	z		ɪ	n	t	*sind*
INF	z	a	ɪ	n		*sein*

- Consider this Hupa agreement paradigm from Embick (2015: 116):

(45) *Agreement prefixes in Hupa*:

	subject	object
1sg	W-	Wɨ
2sg	n-	nɨ
1pl	dɨ	noh-
2pl	oh-	noh-

(46) An analysis based on (46):
   a. [+1, −pl, +subj] ↔ W-
   b. [+1, −pl, +obj] ↔ Wɨ
   c. [+2, −pl, +subj] ↔ n-
   d. [+2, −pl, +obj] ↔ nɨ-
   e. [+1, +pl, +subj] ↔ dɨ-
   f. [+2, +pl, +subj] ↔ oh-
   g. [+pl, +obj] ↔ noh-

- Does this miss any potential generalizations about (46)?

4.2 Accidental homophony?

Question

How do we know that we are not just dealing with distinct morphemes that happen to have the same phonological form? (accidental homophony)

Answer #1: Meta-syncretism
- As we have already seen, syncretism patterns that re-occur could be taken as evidence against simply accidental identity of form.

Answer #2: Syntactic evidence

- Recall from (42) that we have both 1PL/3PL syncretism (*-en*) and 3SG/2PL syncretism (*-t*) in the present tense.
- Are they the same? It seems not (Eisenberg 1973):

(47) a. weil   wir Bier und sie   Wein trink-en
          because we beer and they wine drink-1PL/3PL
          'because we drink beer and they drink wine.'
      b. ?*weil   er Bier und ihr   Wein trink-t
          because he beer and you.PL wine drink-3SG/2PL
          'because he drinks beer and y'all drink wine.'

Answer #3: Morphological evidence

(48) *German definite determiner inflection*:

'the'	masculine sg.	feminine sg.	neuter sg.	plural
NOM	de-<u>r</u>	di-<u>e</u>	da-s	di-e
ACC	de-n	di-<u>e</u>	da-s	di-e
GEN	de-s	de-<u>r</u>	de-s	de-r

- Is the *-e* syncretism in NOM/ACC FEM. systematic or accidental?
- Is the *-r* syncretism in NOM MASC./GEN FEM. systematic or accidental?
- The distribution of adjectival inflection suggests that there is a difference:

(49) a. di-e   schwarz-e Katze sitzt auf dem Tisch
          the-NOM.FEM black-ADJ cat   sits on the   table
          'The black cat is sitting on the table.'
      b. Ich sah di-e   schwarz-e Katze
          I   saw the-ACC.FEM black-ADJ cat
          'I saw the black cat.'

(50) a. de-r   schwarz-e/*n Hund sitzt auf dem Tisch
          the-NOM.MASC black-ADJ   dog sits on the   table
          'The black dog is sitting on the table.'
      b. der Besitzer de-r   schwarze-n/*e Katze
          the owner   the-GEN.FEM black-ADJ   cat
          'the owner of the black cat'

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