

The privative project: its history and basis.

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The structure of this talk:

1. The privative project workshop
2. Phonological theories of representation
3. What *is* the privative project? Privativity in oppositions, features, components, elements...
4. Why was the privative project proposed?
5. Parsimony
6. Overgeneration of natural classes
7. Overgeneration of phonological processes
8. Complexity
9. Some general queries about feature systems

1. The privative project workshop

Work on *subsegmental representation* is of central importance for many phonologists

- but... this work is not seen as crucially important by *all* phonologists
- it can be seen to have ‘fallen out of fashion’ at a recent point in the history of phonology
- given all this, this workshop asks the leading question:
 - *is the privative project still worth pursuing?*

When people go to the trouble of organising a workshop around this question, you might think that their answer is likely to be ‘yes’...

- but... we didn’t want to simply gather a group of people who would unquestioningly agree
- we hope to reconsider old arguments afresh here, and to find out if new arguments should be brought into the debate
- we *do* want to argue that the arguments *should* still be considered, even though the privative project has not convinced the phonological majority, even if they’re rejected once we have considered them
- mainly, we want to try to figure out a few things:
 - *are* the issues that we’re considering here important?
 - do changes in fashions in phonology represent cumulative progress?
 - are fashions changing again?

We (very) briefly set out the history of the issues here, and then consider why it was originally proposed that privativity was worth pursuing.

2. Phonological theories of representation

A well-know phonological distinction differentiates between *theories of representations* and *theories of rules* (Anderson, 1985); although it’s perhaps now better described as a distinction between *representational theory* and *derivational theory* (Harris, 2007)

- representation = the structure and content of phonological forms
- rules/derivation = the relations between different forms

We’re dealing with representation here, but what aspects of representation...?

The issues that are relevant in segmental representation are such things as:

- (i) the machinery that phonologists should use to represent contrasts
 - what is the nature of the *difference* between different segments?
 - should all differences be characterised in the same way?
- (ii) the machinery that phonologists should use to represent similarities
 - what is the nature of the *commonalities* between segments in natural classes?
- (iii) what it is that ‘changes’ in phonological processes
 - should the representational devices be the same in underlying/input and in surface/output representations (assuming that there’s a substantive difference)

The importance accorded to such issues has waxed and waned in the phonological mainstream

- although it’s not necessarily the case, it *can* be that...
 - if the importance placed on working on the nature of rules/derivations takes centre stage, representations recede in importance
 - and vice versa [indeed, McCarthy once famously claimed (1988) that “if the representations are right, then the rules will follow” – a claim retracted in (2001)]

3. What is the privative project? Privativity in oppositions, features, components, elements...

There have been many different understandings of segmental representation in phonology

- the main issue that we’re focusing on here is: what is the *valency* of such representations
 - are they binary-valued [+ X] vs [- X] ?
 - or are they single-valued = ‘privative’ [present] vs ?
 - or are they something else ?

Here’s a break-neck rush through the history of representation and privativity:

3.1 Trubetzkoy (eg, 1939) focused on distinctive *oppositions* – those which could signal a contrast between words in a particular linguistic system

- they could be *privative* (where a marked property is either present or absent)
- *equipollent* (where both members of an opposition are of equal status)
- or *gradual* (where there are several gradations of one property, a less important notion)

3.2 Jakobson (eg, Jakobson, Fant & Halle, 1952) revised this inherently language-specific notion and sought a small language-universal set of *features*, which can be thought to exist independently of the segments that they comprise

- all of Jakobson’s features were equipollent in a sense: there are two ‘members’ in a feature of equal status – they were all binary-valued, with each value characterising an active property

3.3 Chomsky & Halle (1968) maintained Jakobson’s assumption of feature binarity

- such work also saw the rise (or, perhaps, institutionalisation) of *rules* and rule interaction

3.4 The 1980s and early 1990s saw a ‘representational turn’ in phonology, and a fall in the relative importance placed on phonological rules

- Autosegmental Phonology, Dependency Phonology, Metrical Phonology, Feature Geometry, Particle Phonology, Government Phonology: *components, particles, elements*
- in this context we see *the rise of the privative project*, returning to Trubetzkoy’s focus on the possibility of privative oppositions, but retaining Jakobson’s goals of economy and universality
 - one position (which probably became the mainstream assumption) was that *some* features are binary, and others, where the arguments are clear, are privative
 - the true *privative project*, however, argued that, as a matter of principle, and on principled grounds, all features should be thought to be privative

3.5 The mid-late 1990s, in turn, saw a turn away from representations in certain branches of phonology

- post-1993, especially, much attention turned to focus on issues connected to understanding derivations (= ‘rules’) – in the form of ranked constraints in OT
- with the advent of OT, general questions of representation are no longer hotly pursued by many, and much work now seems to have returned to a Jakobsonian/SPE model of representation, with feature-binarity commonly assumed
 - is this a conscious decision?
 - is phonology cumulative?
- there may be reasons why OT is not easily compatible with privativity
 - if AGREE is used to model assimilation, segments *agree* if they have a feature or don’t have it, demolishing the impact of privativity

3.6 What do the 2000s hold?

- *You tell us...*
- work which assumes the values of the privative project has never ceased, and has always been strongly pursued in some quarters
- on the other hand, some phonologists have even rejected discrete, categorial features entirely
- Blaho, Bye & Kramer (2007) – restricting GEN’s freedom of analysis?
- McCarthy (2009) “...a new proposal with three main elements: (i) Distinctive features are privative (present/absent), not equipollent (positive/negative)”

4. Why was the privative project proposed?

Given the current uncertain status of privativity in phonological representations, with some rejecting it and others ignoring the issues, why was it proposed in the first place?

In this (very) short introduction, we will (very) briefly consider some (very) general and no doubt (very) familiar classical phonological arguments in favour of privative features.

5. Parsimony

The most general argument, as we see it, can be called ‘the parsimony principle’:

- “Ockham’s razor with Aristotle’s blade”
Joseph & Janda (2003), in a discussion that has nothing to do with features; but parsimony is of course a very general principle.
- “It may be assumed, given the same conditions, that that form of demonstration is superior to the rest which depends on fewer postulates, hypothesis, or premises ...”
Aristotle, *Posterior Analytics*
- “Pluralitas numquam est ponenda sine necessitate.”
William of Ockham
- “Entities are not to be multiplied without necessity.”
[Leibniz]

A privative approach to feature systems requires fewer features than a binary (or scalar) approach, and thus better conforms to the parsimony principle. “This would clearly be constitute a formal simplification, if the arguments which suggest that binary features are required can be successfully refuted ” (Ewen & van der Hulst 2001:80), and provided we should care about such simplifications.

6. Overgeneration of natural classes

A general argument for privativity is that some unnecessary entities – i.e., some feature values that are predicted by binary approaches – are problematic. Purely binary feature systems overgenerate, in that they predict more natural classes than are attested. A likely candidate is [\pm nasal]:

- [+nasal] characterises the class of nasals and nasalised sounds;
- [–nasal] characterises the ‘rest’, i.e. all oral sounds (vowels, glides, liquids, fricatives and plosives).
- It is no surprise, therefore, that convincing evidence for the set of [–nasal] behaving as a natural class appears to be lacking ...
- though see Noske (1995) for an analysis of Tucano nasal harmony that makes use of [+nasal], [–nasal] and [\emptyset nasal].
- In such cases, the analytical burden is on the privative phonologists, who will have to show that the data can also be accounted for with just [nasal].

A strictly privative approach is harder to maintain for the kind of contrasts that Trubetzkoy called ‘equipollent’. One example involves the contrast between sonorants and obstruents, as expressed by the binary feature [\pm sonorant]:

- [+sonorant] characterises the class of sonorants (vowels, glides, liquids, nasals);
- [–sonorant] characterises the class of obstruents (fricatives, plosives),
- with overwhelming evidence for natural class behaviour of both.
- Indeed, based on stop contrasts in Ikwere that involve differences in air pressure, Clements & Osu (2001) suggest that both [\pm sonorant] and [\pm obstruent] are required ...
- though see Botma & Smith (2006) for a privative analysis of a similar contrast in Cama.

Other arguably equipollent contrasts include continuancy, tongue-root advancement, and voicing.

How do strictly privative approaches deal with equipollence? Some are in fact ‘binary-in-disguise’, such as radical cv phonology (Van der Hulst 1995):

- Radical cv phonology assumes just two elements, C and V.
- In isolation, C represents a stop and V a vowel (combinations of C and V represent other segment types):

x	x
C	V
stop	vowel

- Thus, having C implies not having V (in the same structural position), and vice versa.
- To this extent, C and V could be said to express an equipollent contrast.

7. Overgeneration of phonological processes

Purely binary feature systems also overgenerate in that they predict phonological processes that are unattested. For instance, an approach that assumes binary [round] and [back] predicts four possible umlaut processes, of which only two are attested (cf. Ewen & Van der Hulst 2001):

- [-round] → [+round] / __ [+round] (e.g. /i/ → [y] / __ u, as in Old Norse *u*-umlaut)
- [+round] → [-round] / __ [-round] (e.g. /u/ → [ʊ] / __ i, an unattested change)
- [-back] → [+back] / __ [+back] (e.g. /i/ → [ɨ] / __ u, an unattested change)
- [+back] → [-back] / __ [-back] (e.g. /u/ → /y/ / __ i, as in Old English *i*-umlaut)

In other words, [+back] and [-round] appear to behave as though they are not positive phonological properties. An approach that assumes privative features like [round] and [front] (or ‘monovalent elements’ like I and U) thus appropriately limits the kinds of umlaut that can be represented.

8. Complexity

A further problem is that binary approaches cannot adequately express the relative complexity of a segment. This is arguably important in the representation of positional neutralisation (e.g. in final devoicing, where the coda position is incapable of supporting [voice]) and in context-free changes such as the unrounding of front vowels in the history of English:

		*gos-i ‘geese’
Old English <i>i</i> -umlaut	:	gøs-i
Loss of final (umlaut triggering) –i	:	gøs
Context-free unrounding	:	ges

where unrounding is usually attributed to the relative complexity of /ø/.

Thus, relative complexity may be a relevant factor in diachronic change. Similarly, we may expect the relative complexity of segments to be mirrored in the order in which they are acquired. Privative feature systems provide an inherent evaluation metric to calculate a segment’s complexity; binary feature systems do not.

9. Some general queries about feature systems

The privative project is one of a set of questions that we can/should ask about subsegmental representation. John Anderson has proposed the following context and further issues:

Firstly, an observation (or is it just that?): Deployment of features implements the recognition of the componentiality of phonological (more generally, linguistic) sequential units.

Then, a question: What dimensions of componentiality, or internal structure, are feature systems responsible to?

Possible answers:

- a) cross-classification, where a cross-class is simpler to represent than the member classes of the cross-class, and is ‘natural’ (?);
- b) hierarchizations such as:
 - i) possible phonetic dimensions: vowel height? sonority?
 - ii) markedness;
- c) sub-groupings of features and
- d) their possible hierarchization (geometry);
- e) capacity for feature ‘spreading’

Are (a)-(e) all phonologically relevant? If so, should a feature system satisfactorily represent any or all of these? If not, why not?

Further questions, whose appositeness partly depends on answers to the preceding:

- I) Is satisfaction of (c) independent of whether the feature system is multi-valued or binary or privative, or some combination of these?
- II) Can a feature system based on just one of the types in (I) satisfy all of (a), (b), (c), (d), and (e)?
- III) Are units adequately represented as bundles and possibly sub-bundles of features, or do (some) hierarchizations require appeal to asymmetrical combination of individual features or feature bundles?

How important are other (related) desiderata, and how well do the different types of feature system in (I) satisfy them? E.g.:

- A) economy of features?
- B) restrictiveness of representation?

We would like to ask the following further questions:

- why has the privative project not taken over the phonological mainstream?
- (why) has there been a decline in its popularity?
- should phonologists assume that subsegmental features can be privative?
- should we assume that they all are? Just because some are?
- or has this approach always been misguided?

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