Impoverishment

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Additional Operations in Halle & Marantz (1993)

- Impoverishment
- Fission
- Fusion
- Readjustment

Impoverishment

Delete features of a syntactic head

$$\begin{bmatrix} +1 \\ +pl \end{bmatrix} \rightarrow [+1]$$

$$\begin{bmatrix} +1 \\ +pl \end{bmatrix} \rightarrow [\ \ ]$$

The Double Role of Impoverishment

- Impoverishment serves as a **repair** operation for cases where word(form)s get the “wrong” exponent/vocabulary item
- Impoverishment captures **generalizations** on syncretism which are independent of single vocabulary items

Impoverishment as Repair

Impoverishment as Repair

	sg	pl
1	leg-**e**	leg-**en**
2	leg-**st**	leg-**t**
3	leg-**t**	leg-**en**

	sg	pl
1	leg-t-**e**	leg-t-**en**
2	leg-t-**est**	leg-t-**et**
3	leg-t-**e**	leg-t-**en**

Vocabulary Items

[+2 -pl] $\leftrightarrow$ **st**
[–2 –1] $\leftrightarrow$ **t**
[–2] $\leftrightarrow$ **e**

Problem:

Violation of the Subset Principle

Impoverishment as Repair

Syntax: [+Agr –2 –1 –pl]

Impoverishment: **[1] ➔ Ø / ____ [+past]**

[+Agr –2 –pl]

Vocabulary Items

[+2 -pl] ↔ **st**
[–2 –1] ↔ **t**
[–2] ↔ **e**

↑

[–2] ↔ **e**

Impoverishment as Generalization

A System-wide Syncretism Pattern

Present

	sg	pl
1	leg-**e**	leg-**en**
2	leg-**st**	leg-**t**
3	leg-**t**	leg-**en**

	sg	pl
1	bi-**n**	sind-**Ø**
2	bi-**st**	sei-**t**
3	is-**t**	sind-**Ø**

Past

	sg	pl
1	leg-t-**e**	leg-t-**en**
2	leg-t-**est**	leg-t-**et**
3	leg-t-**e**	leg-t-**en**

	sg	pl
1	war-**Ø**	war-**en**
2	war-**st**	war-**t**
3	war-**Ø**	war-**en**

In the past tense 1sg forms are always identical to 3sg forms

Capturing System-wide Syncretism by Impoverishment

$$+/-1 \rightarrow \emptyset \; /\_\_\_\_[+\text{Past}]$$

	sg	pl
1	[+1 –2 –Pl]	[–1 –2 +Pl]
2	[–1 +2 –Pl]	[–1 +2 +Pl]
3	[–1 –2 –Pl]	[–1 –2 +Pl]

$\Rightarrow$

	sg	pl
1	[–2 –Pl]	[+1 –2 +Pl]
2	[–1 +2 –Pl]	[–1 +2 +Pl]
3	[–2 –Pl]	[–1 –2 +Pl]

$\Rightarrow$ No vocabulary insertion can break the identity of 1sg and 3sg

Impoverishment and Restrictiveness

An Alternative to Impoverishment: Rules of Referral

Rules of Referral stipulate the identity of specific paradigm cells:

In the past tense 3sg verb forms are identical
to corresponding 1sg verb forms

	Singular	Plural
1	legte	legten
2	legtest	legtet
3	legte	legten

	Singular	Plural
1	war	waren
2	warst	wart
3	war	waren

Sind Rules of Referral Inhärent Paradigmatisch?

- Eine Art Rules of Referral zu verstehen ist als asymmetrische Verweise zwischen Paradigmenzellen
- In einer postsyntaktischen DM-artigen Architektur kann man sie aber auch als Regeln verstehen, die Merkmale vor Vocabulary Insertion verändern:

$$[+3\text{–pl}] \rightarrow [+1\text{–pl}] \,/\_\_\_\_[+\text{past}]$$

- Dann funktionieren Rules of Referral ähnlich wie (aber weniger restriktiv als) Impoverishment-Regeln

A Simple Example Paradigm

[–masc –pl]$_1$	[–masc +pl]$_2$
[+masc –pl]$_3$	[+masc +pl]$_4$

$\approx$

a_1	b_2
c_3	d_4

Possible Types of Syncretism

Type 0

a	b
c	d

Type 1

a	b

Type 2

a	
	b

Type 3

a	**b**
b	**a**

Deriving Type-0 Syncretism

	[–m –p]	[–m +p]	[-+m –p]	[+m +p]
Insertion:	a:[–m –p]	b:[–m +p]	c:[-+m –p]	d:[+m +p]

a	b
c	d

Deriving Type-1 Syncretism

	[–m –p]	[–m +p]	[+m –p]	[+m +p]
Impoverishment:	[–m]	[–m]	[+m]	[+m]
Insertion:	[–m]:a		[+m]:b	

p → ∅

a	b

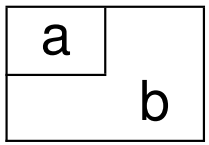
Deriving Type-2 Syncretism

	[–m –p]	[–m +p]	[+m –p]	[+m +p]
	[–m –p]	[+p]	[+m –p]	[+m +p]
	[–m]	[ ]	[+m]	[+m]
	[–m]	[ ]	[ ]	[ ]
	[–m]:a	[ ]:b		

$$-m \rightarrow \emptyset / [\_\_\_\_\_ +p]$$

$$p \rightarrow \emptyset$$

$$+m \rightarrow \emptyset$$



Why Type-3 Syncretism Cannot Derived

[–masc –pl]$_1$	[–masc +pl]$_2$
[+masc –pl]$_3$	[+masc +pl]$_4$

* $\Rightarrow$

a	**b**
b	**a**

To derive this paradigm, the single cells must be impoverished such that:

(i) $\text{Cell}_1 = \text{Cell}_4$

(ii) $\text{Cell}_2 = \text{Cell}_3$

(iii) $\text{Cell}_{1,4} \neq \text{Cell}_{2,3}$

Why Type-3 Syncretism cannot be Derived

[–masc –pl]$_1$	[–masc +pl]$_2$
[+masc –pl]$_3$	[+masc +pl]$_4$

$\ast \Rightarrow$

a	**b**
b	**a**

The only way to guarantee that $\text{Cell}_1 = \text{Cell}_4$
is to impoverish both cells to [ ]

The only way to guarantee that $\text{Cell}_2 = \text{Cell}_3$
is to impoverish both cells to [ ]

but this results in complete syncretism for all 4 cells ($\text{Cell}_{1,4} = \text{Cell}_{2,3}$)