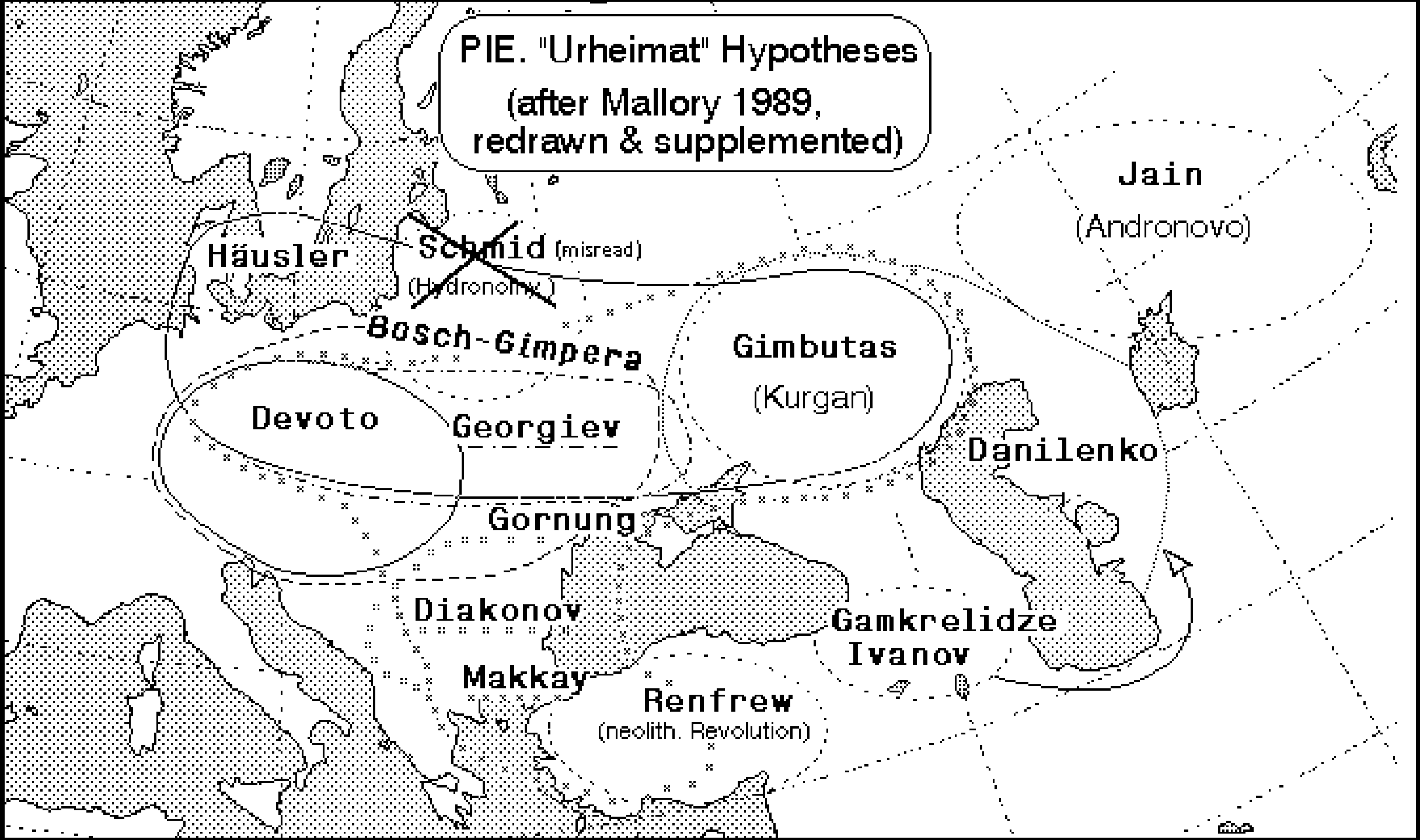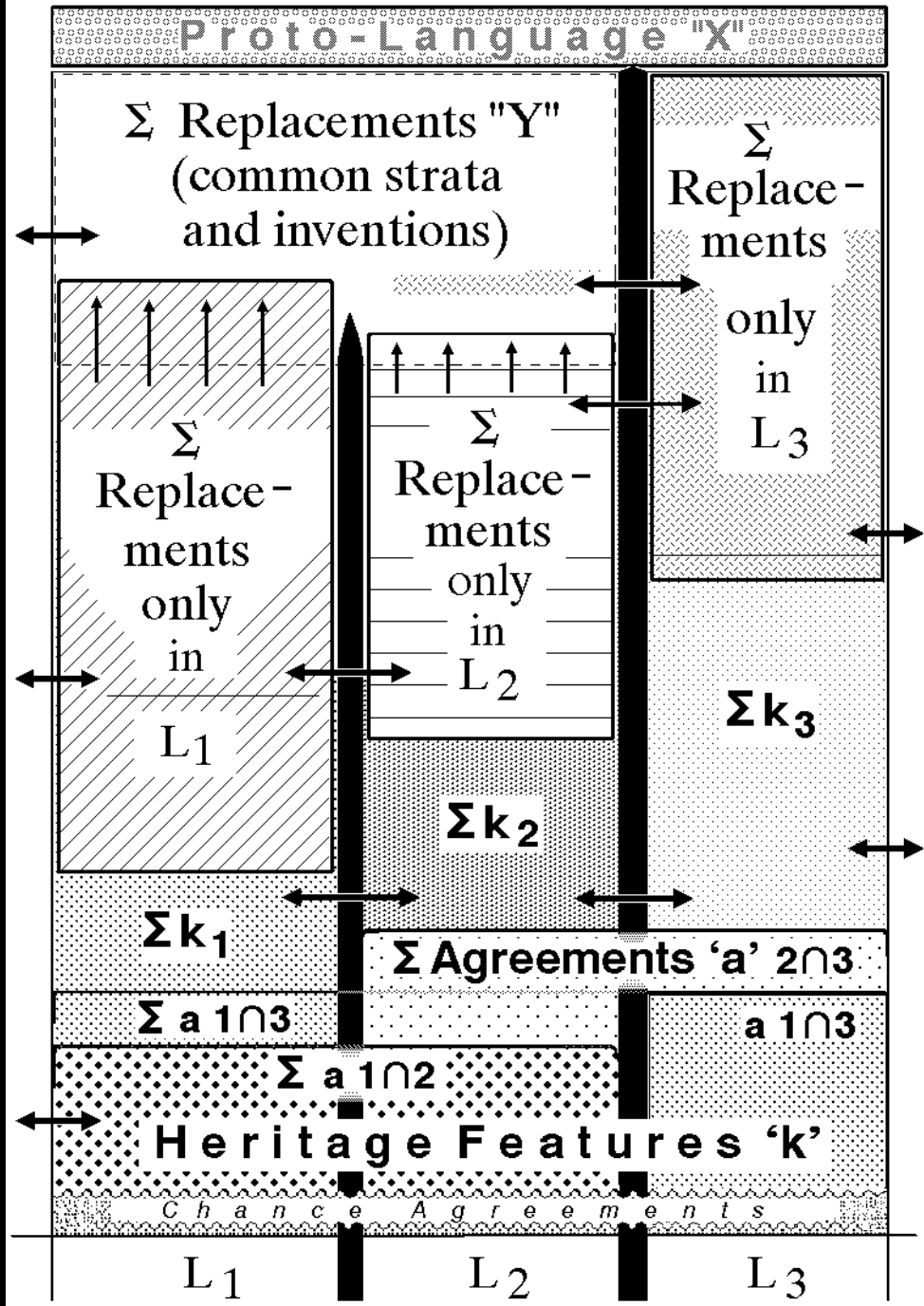# Genealogy of the Main Indo-European Branches - Applying the Separation Base Method

Hans J. Holm (2000),
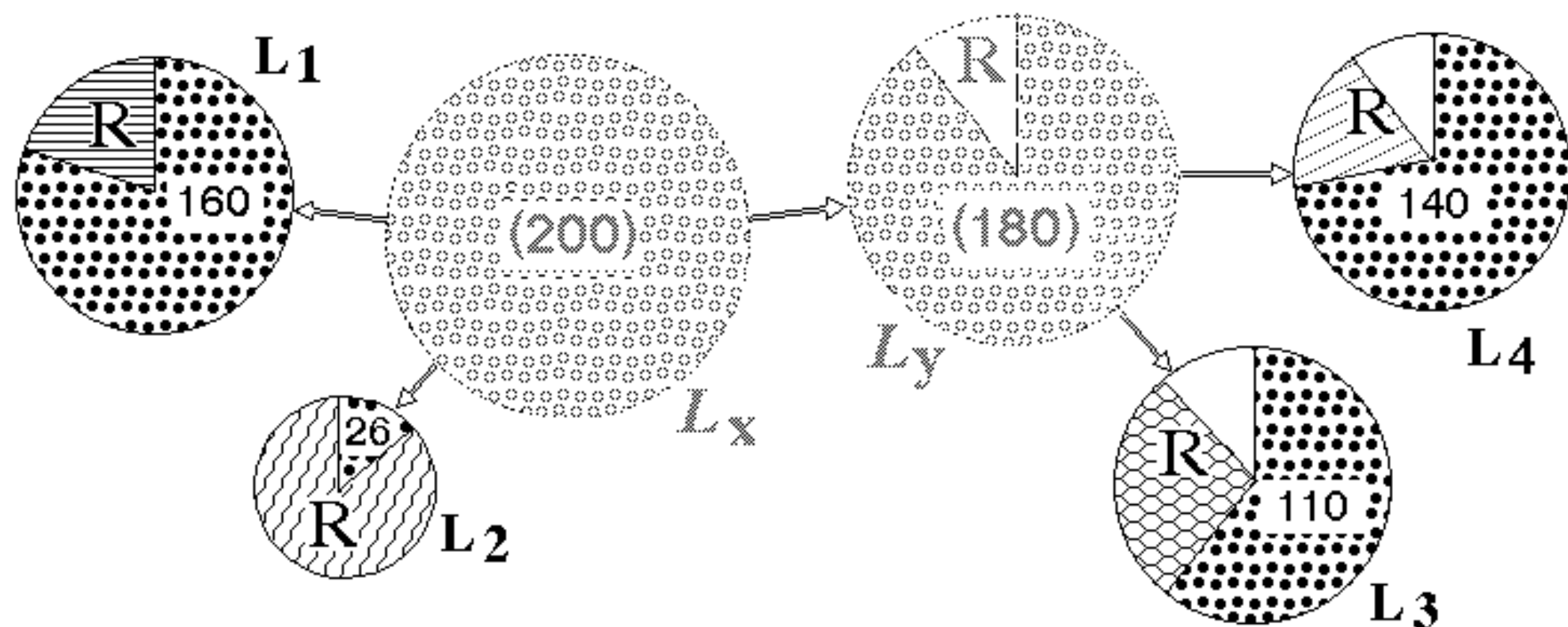
Main figures only

PIE. "Urheimat" Hypotheses (after Mallory 1989, redrawn & supplemented)

Jain (Andronovo)

Häusler

Schmid (misread) (Hydronomy)

Bosch-Gimpera

Gimbutas (Kurgan)

Devoto   Georgiev

Danilenko

Gornung

Diakonov

Gamkrelidze Ivanov

Makkay

Renfrew (neolith. Revolution)

Dissociation model of 4 languages

L_x, L_y : hypothetical proto-languages

$L_1 - L_4$: (L_2 poorly) attested languages
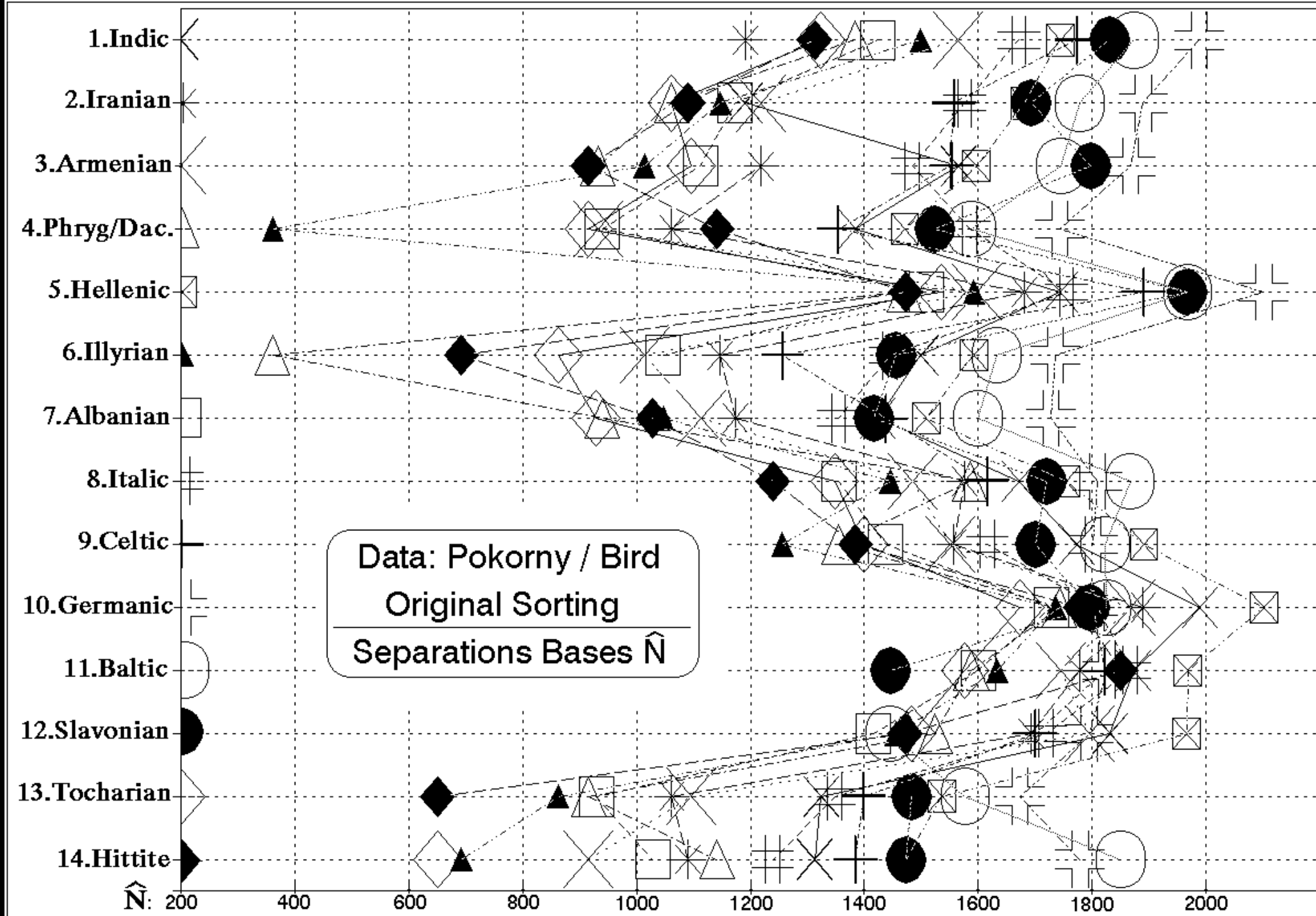
R : replacements

Numbers : etymological heritage 'k' (dotted)

@Holm99

$$H_g(X=a|N,k_1,k_2) = \frac{\binom{k_1}{a}\binom{N-k_1}{k_2-a}}{\binom{N}{k_2}}$$

$$Bx_{i,j} = \frac{1}{n-2}\sum_{\hat{N} \neq i,j}\left|\hat{N}_i - \hat{N}_j\right|$$

$$\hat{Var}(\hat{N}) = \frac{k_1 k_2 \cdot (k_1-a)(k_2-a)}{a^3}$$

Data: Pokorny / Bird
Original Sorting
Separations Bases $\hat{N}$

Data: 5 Test Variables

C=Parallel A+2

ø = 5

C

A=Base, ø=3

B=nearest

E=mirrored
to y-axis of A

mirrored to x-axis of A->D

	AB	AC	AD	AE	BC	BD	BE	CD	CE	DE
r_{PM}	0,89	1	-1	-0,81	0,89	-0,89	-0,89	-1	-0,81	0,81
Chi^2	1,07	5,18	22,88	18,23	6,98	9,2	8,39	48,7	41,8	1,95
	1,56	10,54			4,2	14,66	16,67	11	10,2	
|Diff.|	0,67	2	2,33	2,33	1,83	1,83	1,83	2,67	2,67	0,67
Wilc.U	8	0	10,5	10,5	0	10	10	2	4	5

Chart axis labels (vertical, top to bottom): Grm, Bal, Sla, Cel, Ita, Ill, PhD, Ana, Tok, Alb, Arm, Ira, Ind, Gre

In-chart labels: Cel, Ita, Ana, Cel, Ita, Ana, Ana

Legend:
Data: Pokorny / Bird
Cel : Ita : Ana
Prehistorical Relations "Bx"

Bottom axis: closer ← → farther

Bx: 100 200 300 400 500 Lexemes

Data: Pokorny / Bird

Estimated Lexeme Bases
$\hat{N}$ at Separation

remained heritage lexemes at separation →