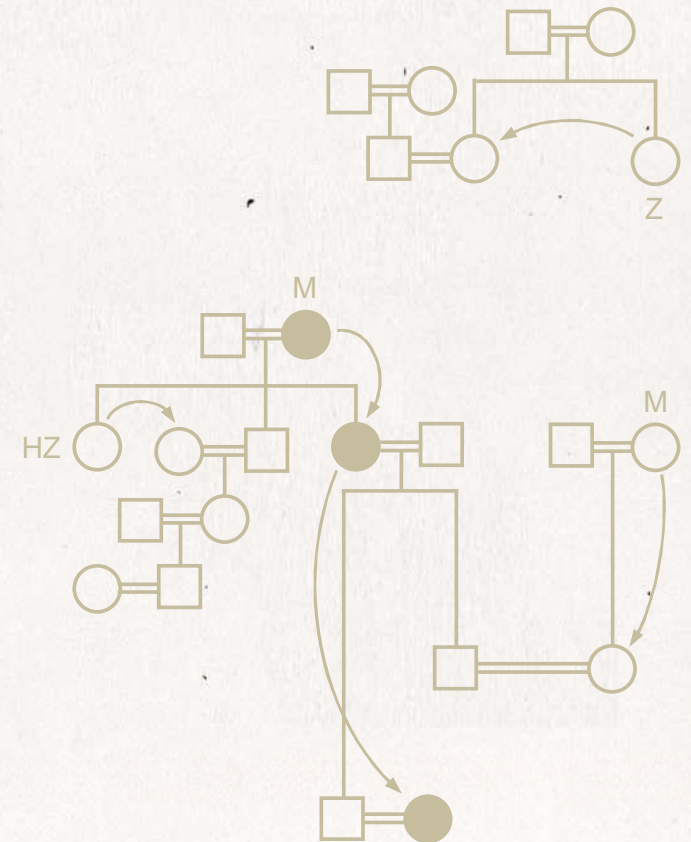
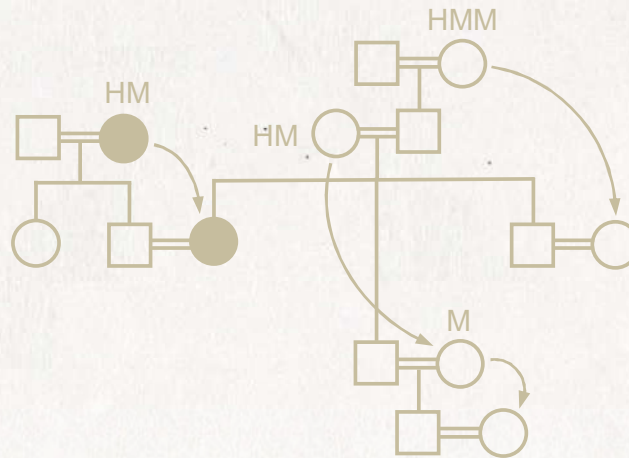
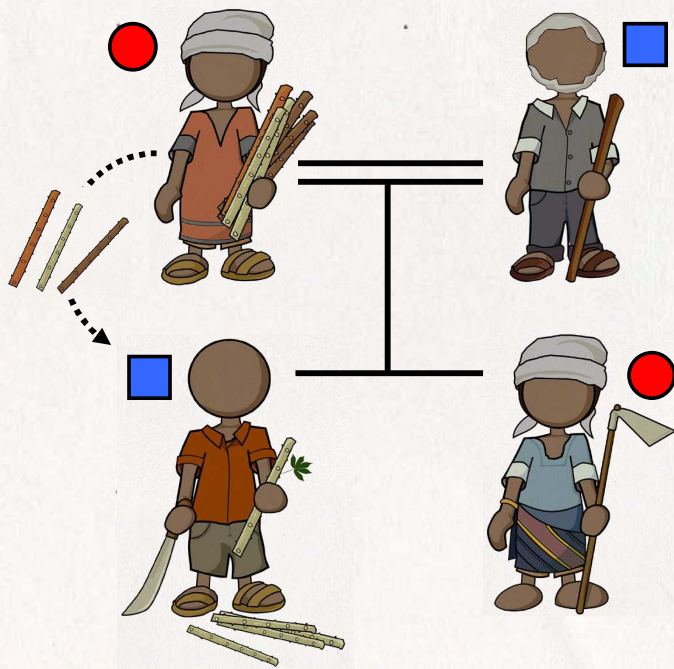


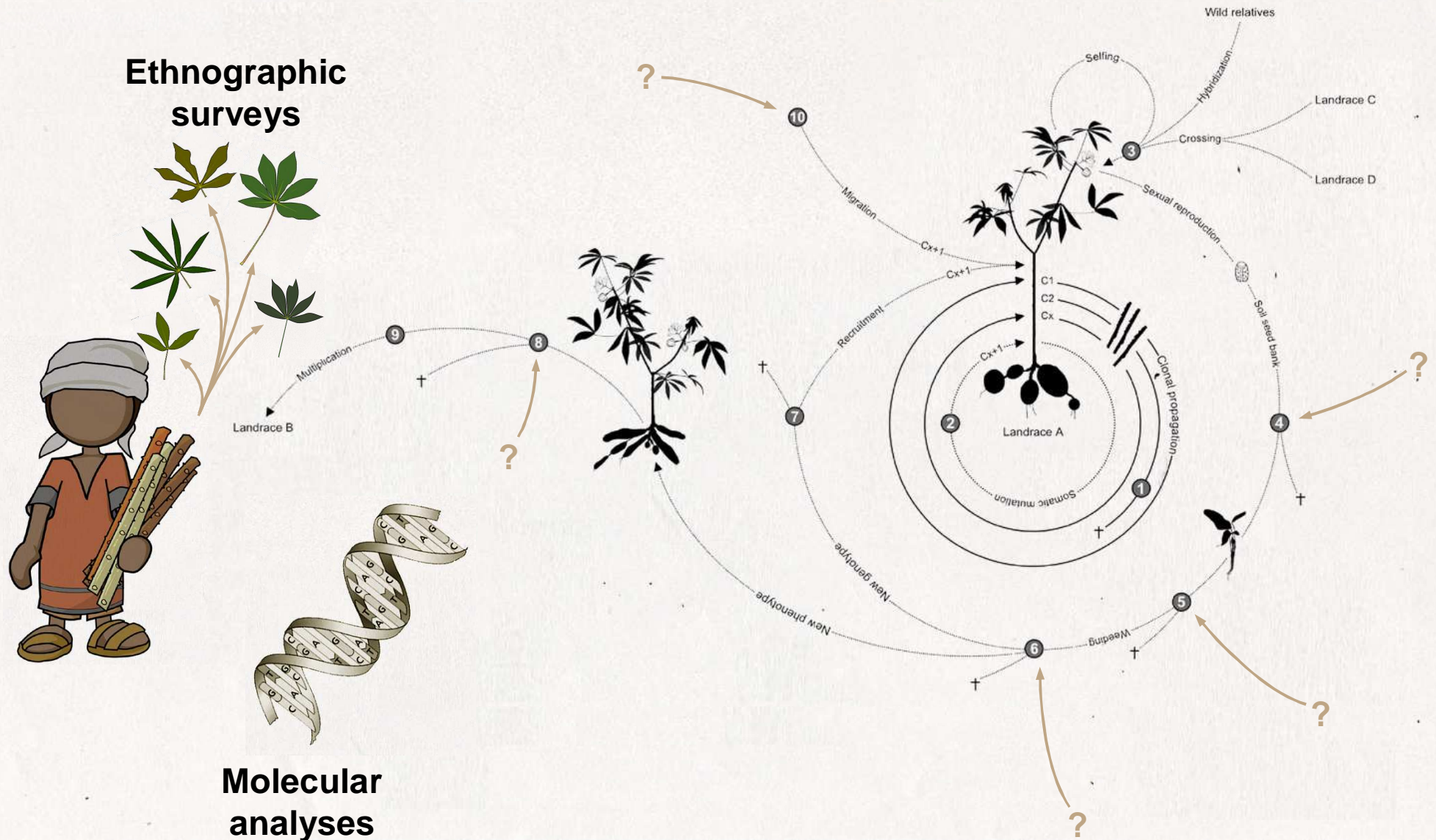
Marriage exchanges, seed exchanges, and the dynamics of manioc diversity in Gabon

Marc Delêtre

Agrobiodiversity Ireland
Galway, February 9th, 2012



Unravelling the dynamics of crop genetic diversity



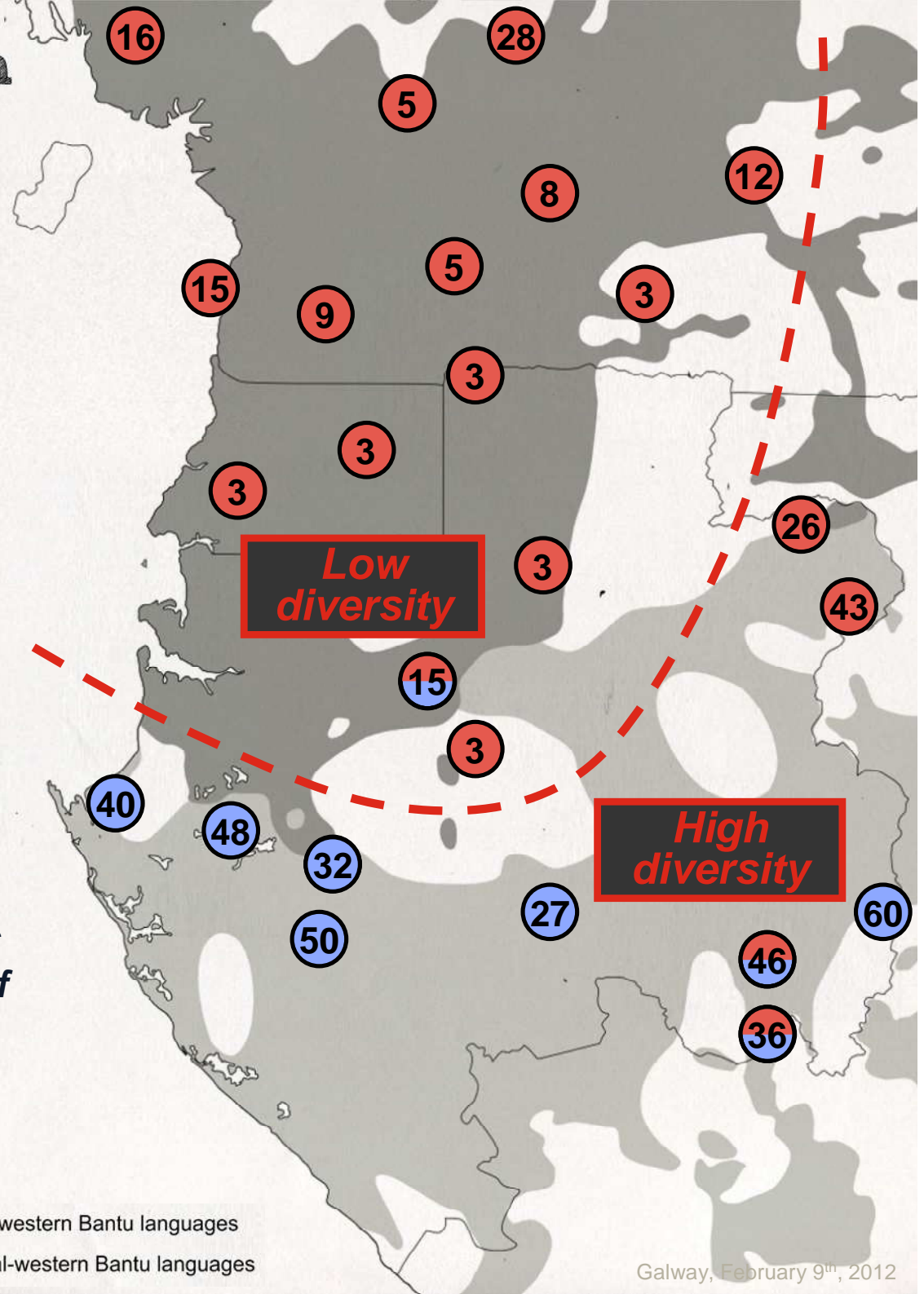
Delêtre M (2010) The ins and outs of manioc diversity in Gabon, Central Africa: A pluridisciplinary approach to the dynamics of genetic diversity of *Manihot esculenta* Crantz (Euphorbiaceae). PhD dissertation (Trinity College, University of Dublin, Dublin)

Manioc diversity in Gabon

Two zones :

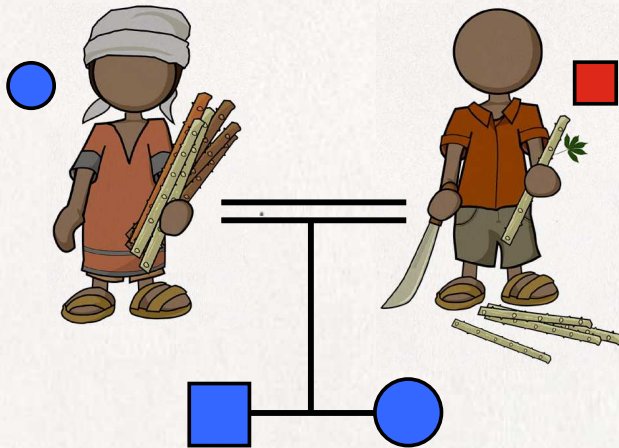
- a northern domain
 - low diversity
(average 8-9 landraces / village)
 - patrilineal
- a southern domain
 - high diversity
(average 40 landraces / village)
 - matrilineal

Geographical patterns of manioc genetic diversity mirror the spatial distribution of patrilineal and matrilineal societies



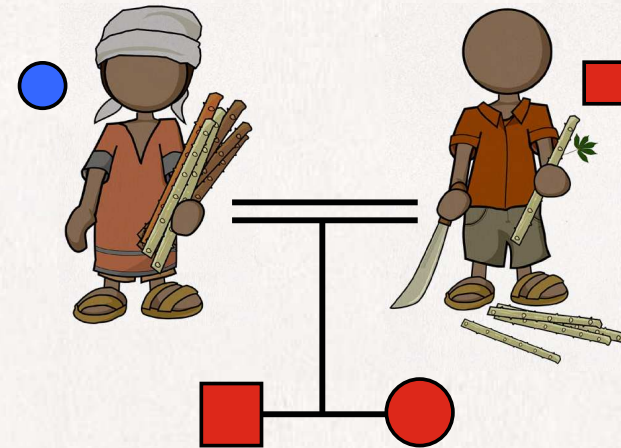
Kinship systems and rules of transmission

Matrilineal system



In a **matrilineal** system, children take the clan of their mother...

Patrilineal system



... while in a **patrilineal** system, clan membership is inherited from the father

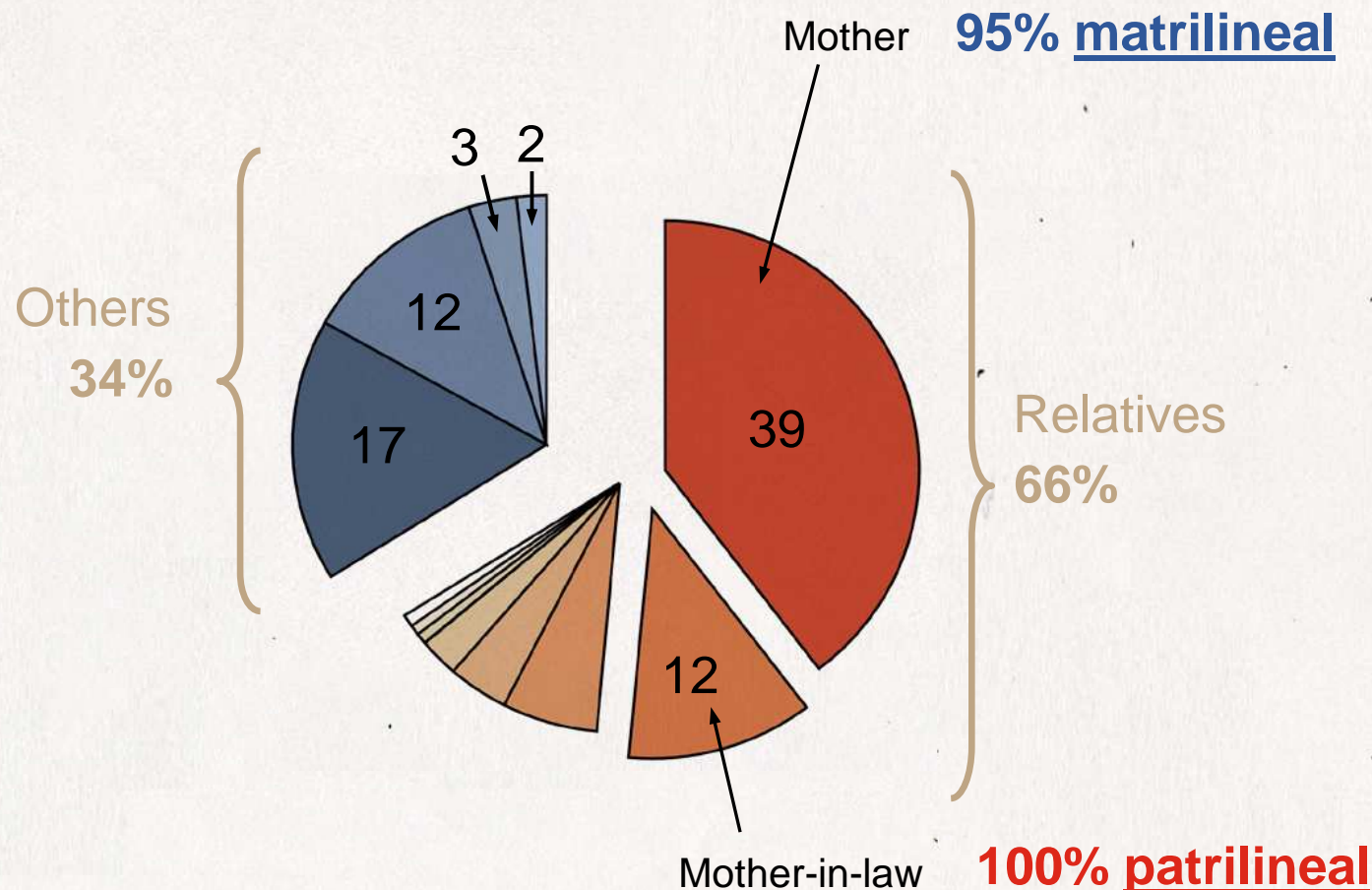
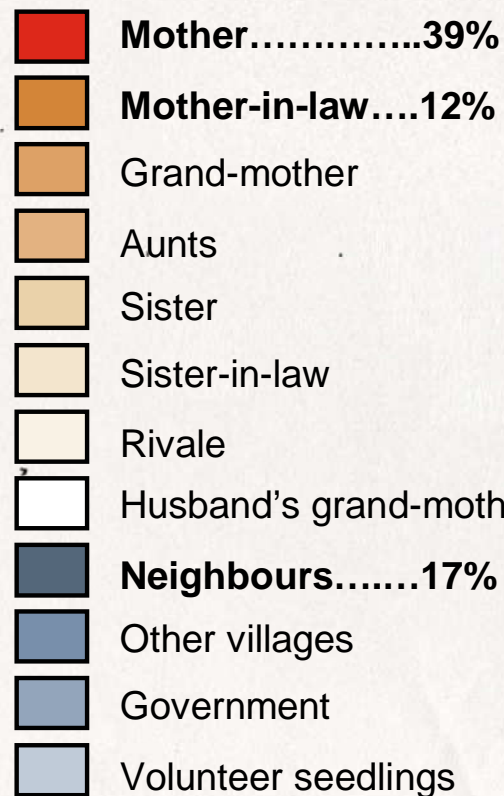
● ■ Clan (lineage)

○ □ Marriage

○ □ Children

Kinship systems and rules of transmission

Origin of manioc landraces



Origin of manioc cuttings for 191 farmers (percentage of the total number of exchanges, N= 254). Details are given for the “relatives” category in the lower pie chart. “Rivale” designates concubine in polygynous households.

Kinship systems and rules of transmission

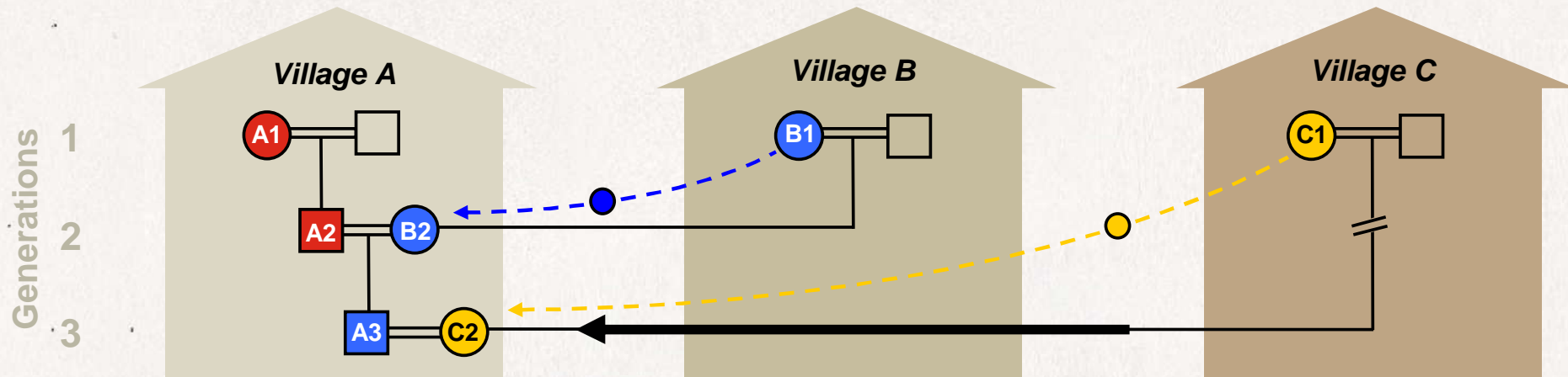
Community	Rules of descent*	Modes of transmission†										
		M	MM	Z	HM	HMM	HZ	R	C	N	O	Pg
DUA	3M	0.93						0.07				
IMB	3P	0.24	0.43		0.10			0.14		0.29	0.05	
MAN	2M	0.44		0.06				0.06		0.17	0.39	
MBG	1P	0.21			0.79							
MKA	1M / 1X	0.94						0.06				
MOP	5P / 3M	0.24	0.05	0.10	0.19	0.05	0.10	0.05	0.10	0.24	0.14	
MYB	1X	0.40	0.33		0.13					0.20		
NBD	1M	0.93	0.07	0.29				0.21		0.21	0.36	
ODB	1P / 3M	0.33								0.25	0.42	0.67
ODJ	1M	0.87								0.68	0.32	

* Number of groups with **patrilineal** (P), **matrilineal** (M), or mixed (X) descent.

† Key to abbreviations: **M, Mother**; MM, Grand-mother (Mother's mother); Z, Sister; **HM, Mother-in-law** (Husband's mother); HMM, Grand-mother-in-law (Husband's mother's mother); HZ, Sister-in-law (Husband's sister); R, Other relatives; C, Rivale (Concubine in polygynous households); N, Neighbourhood; O, Other villages; Pg, Development program. Values reported in the table indicate the percentage of farmers mentioning each source (several sources are possible).

Kinship systems and rules of transmission














Matrilineal and virilocal society

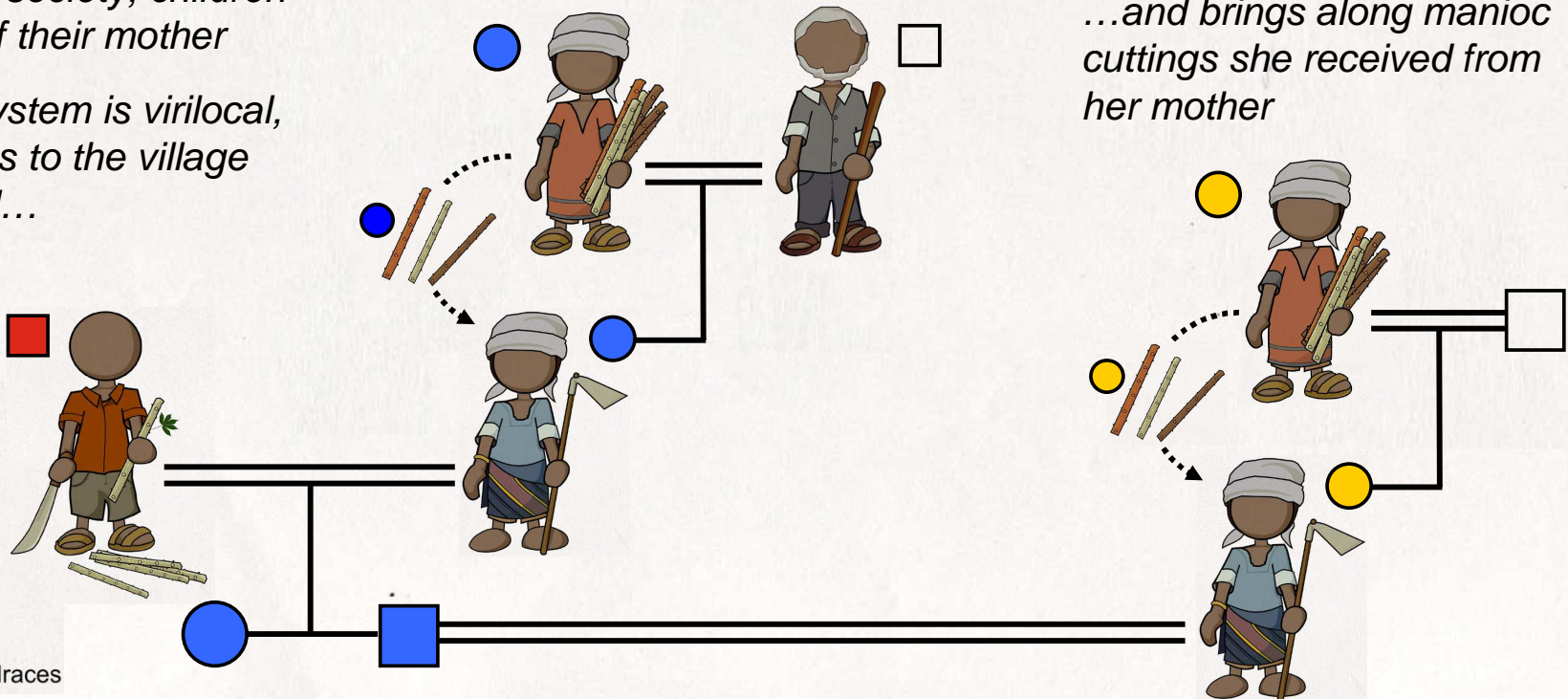


In a matrilineal society, children take the clan of their mother

Because the system is virilocal, the bride moves to the village of her husband...

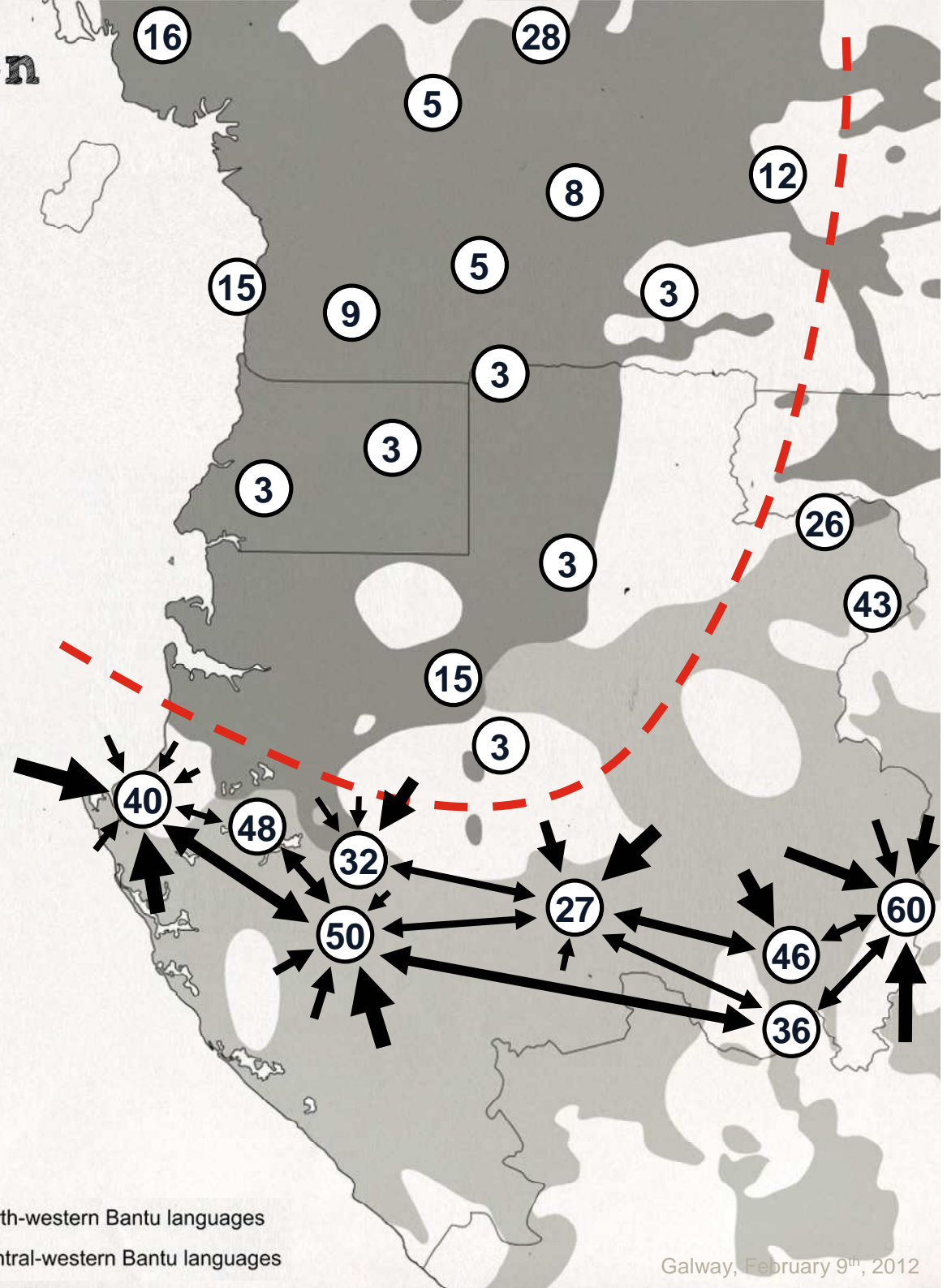
...and brings along manioc cuttings she received from her mother

-  Village
-  Man
-  Woman
-   Clan (lineage)
-   Marriage
-   Children
-   Clones (MLG)
-   Transmission of landraces



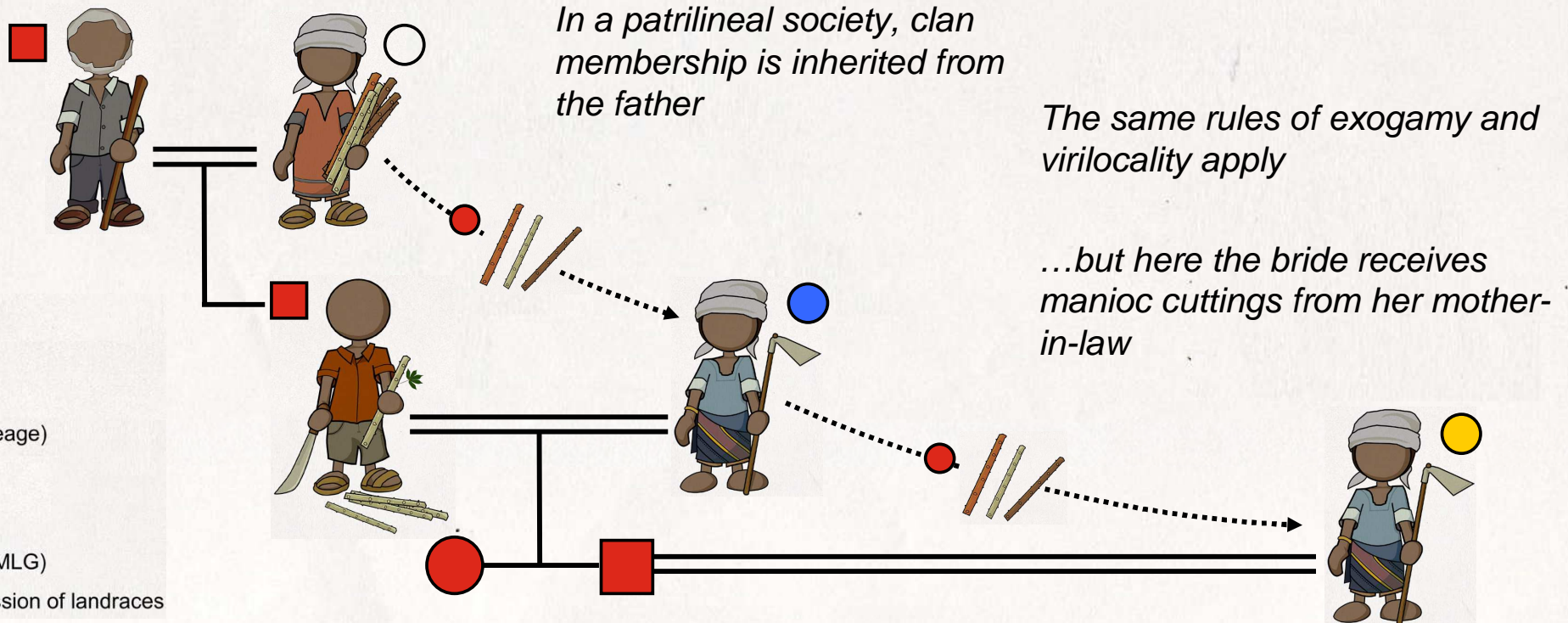
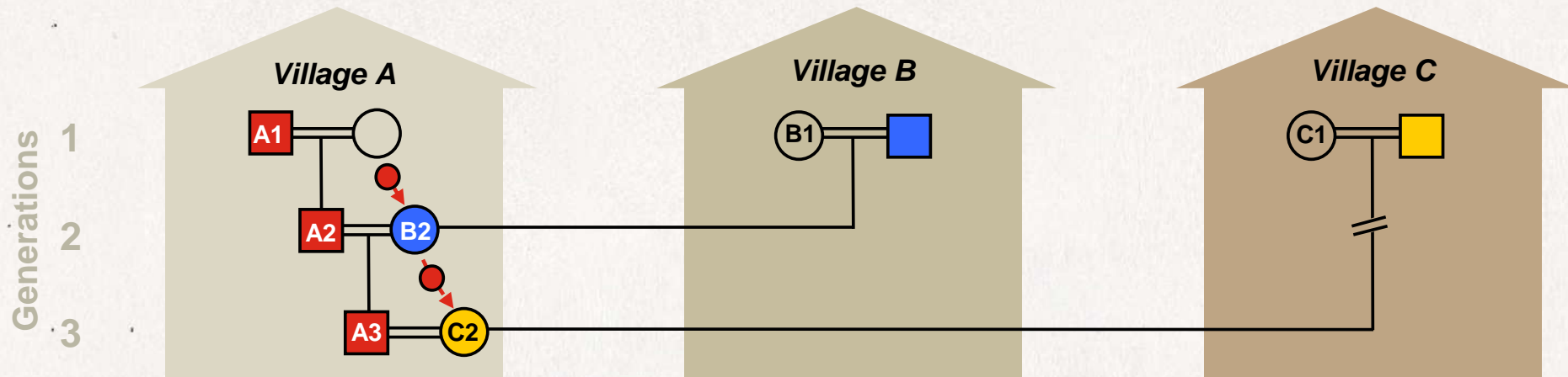
Manioc diversity in Gabon

In the southern matrilineal domain, by exchanging wives, villages also exchange manioc clones ...



Kinship systems and rules of transmission

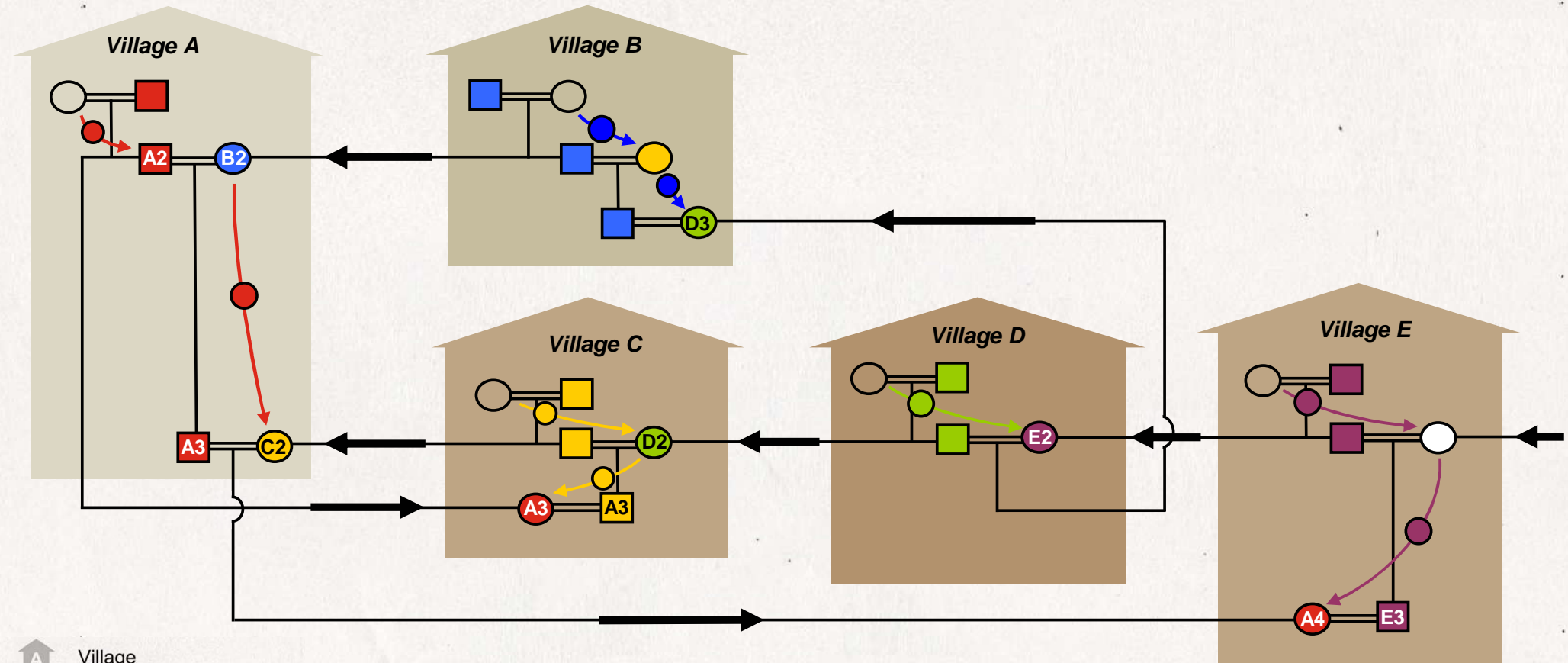
Patrilineal and virilocal society



- Village
- Man
- Woman
- Clan (lineage)
- Marriage
- Children
- Clones (MLG)
- Transmission of landraces

Kinship systems and rules of transmission

Patrilineal and virilocal society

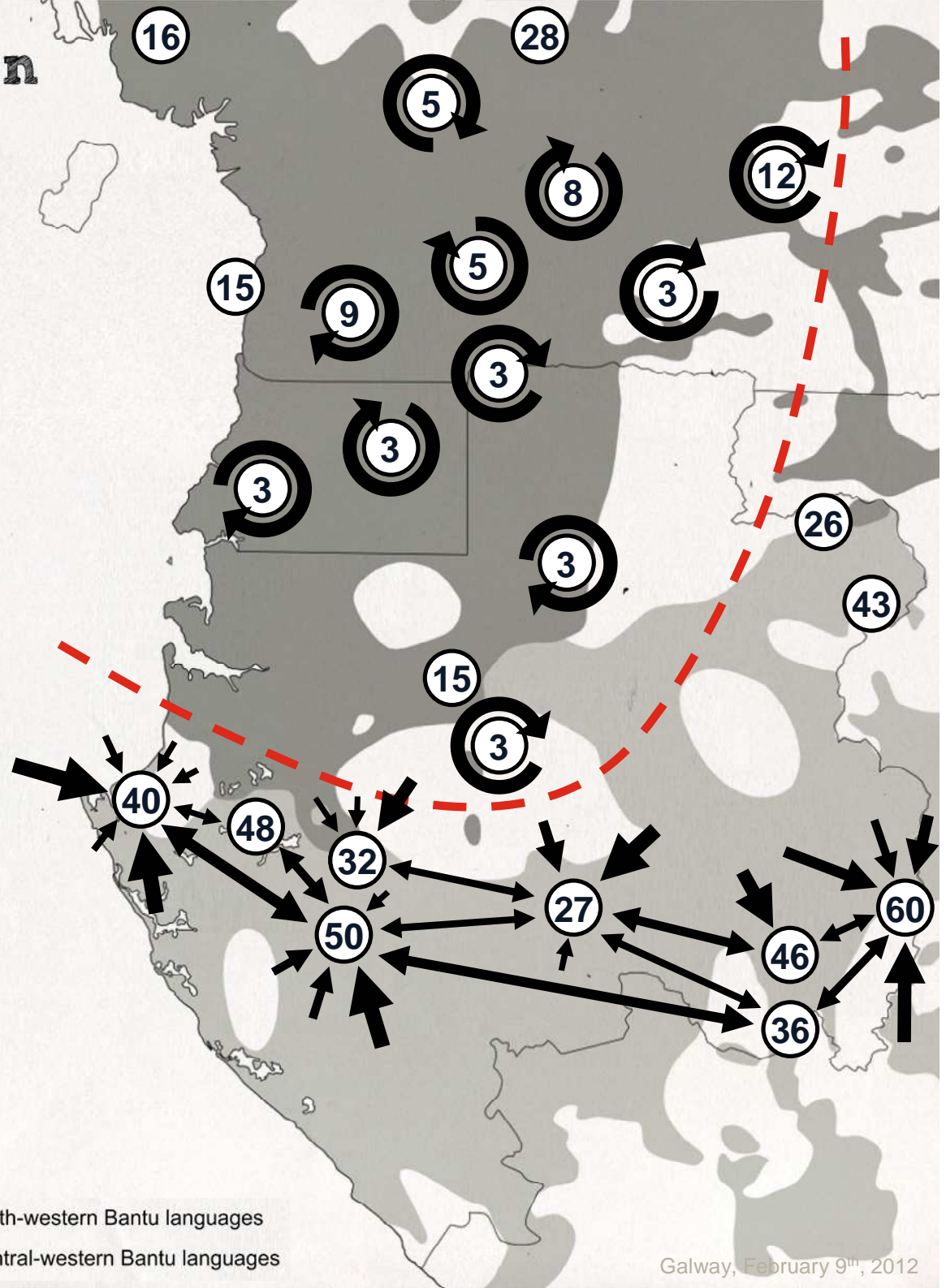


In patrilineal virilocal societies, there is no inflow of manioc cuttings accompanying the inflow of women

Manioc diversity in Gabon

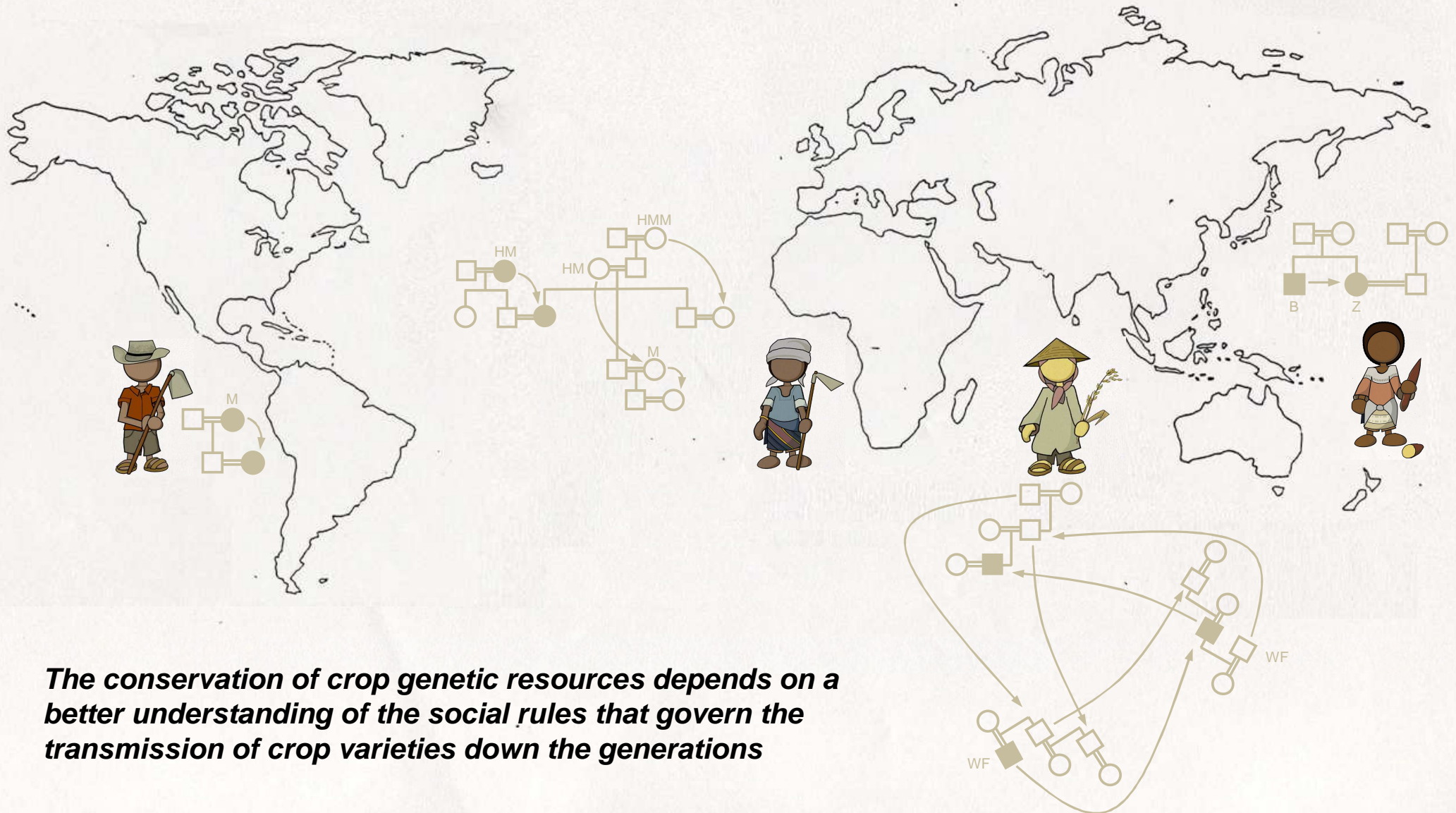
In the southern matrilineal domain, by exchanging wives, villages also exchange manioc clones ...

... while villages in the northern patrilineal domain function like closed systems

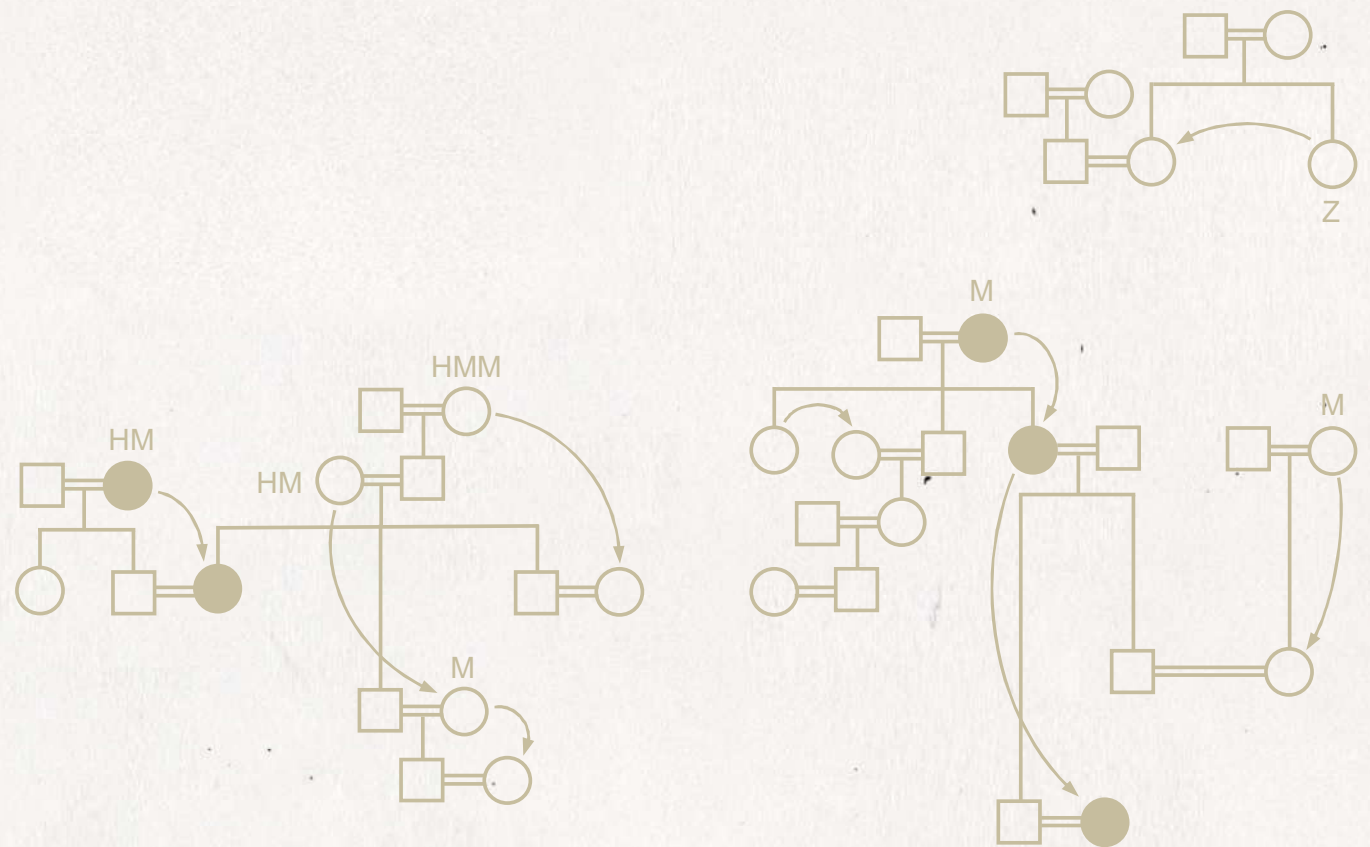


Conclusion and perspectives

Many examples of seed transmission systems exist elsewhere in the world...



The conservation of crop genetic resources depends on a better understanding of the social rules that govern the transmission of crop varieties down the generations



Marc Delêtre, Doyle B McKey, and Trevor R Hodgkinson (2011) Marriage exchanges, seed exchanges, and the dynamics of manioc diversity. *Proceedings of the National Academy of Sciences of the United States of America* 108: 18249-18254