

HSN and Modern Data

Connections between HSN and Modern Data and Health (Genetics)

EHPS Workshop on Modern Data and Health, Copenhagen

Kees Mandemakers

17th of October 2016



HSN & Modern Data

Short reminder

What is HSN and what is LINKS



HSN & Links with Modern Data

Discuss Opportunities and Practices

- LINKS database and Genetics**
- Link with Basic Register of Persons [BRP]**
- Link with Causes of Death register**
- Link with System of Social Statistical Files**

LINKing System for Historical Family Reconstruction

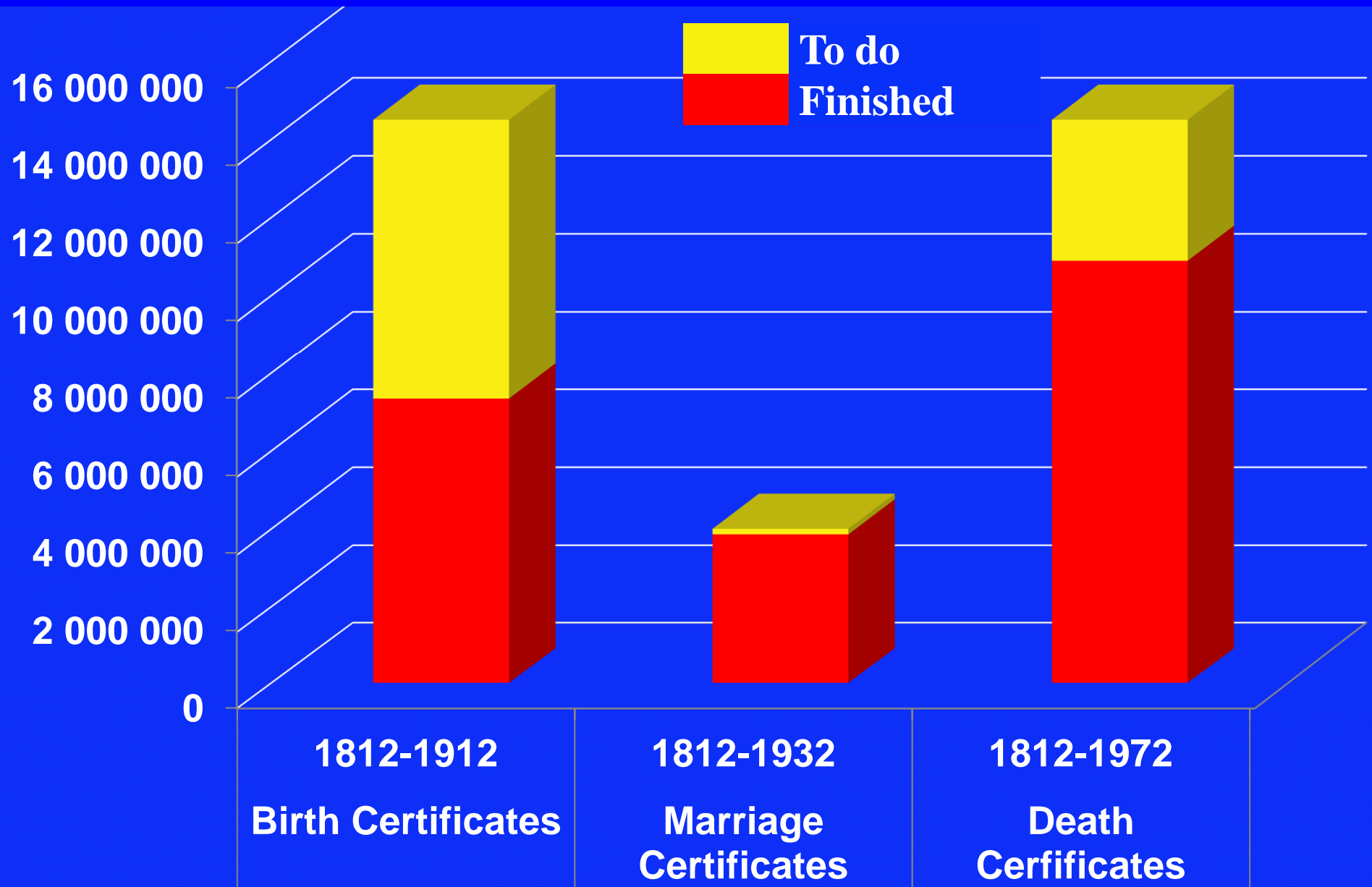
Data from

-----Wie
-----Was
-----Wie

BETA



Civil Certificates, May 2014



My Family



BYRON JENSEN SESSIONS
b 22 Jul 1914 Wyoming
m 10 June 1936 Hutton, Nebraska
d 13 July 1980 Salt Lake City, Utah



TERRY GREEN SESSIONS
b 6 September 1875 Woodstock, Utah
m 4 April 1896 Byron, Wyoming
d 5 November 1930 Trembl, Wyoming



BYRON JENSEN SESSIONS
b 21 December 1943 Paeon, Utah
m 4 September 1965 Kensington, England



SELMA EMMA JENSEN
b 3 January 1880 Logan, Utah
m 8 April 1896 Byron, Wyoming
d 24 Aug 1941, Byron, Wyoming



GILBERT BROWN
b About 1895, Illinois
d 1980 Rawlins, Wyoming



BERNICE FERN BROWN
b 14 March 1919 Cuba, Illinois
m 10 June 1936 Harrison, Nebraska
d 1980 Rawlins, Wyoming



MINNIE MAY RHEA
b Nov 1900 Cuba, Illinois
d 1980 Rawlins, Wyoming



BYRON "LARED" SESSIONS
b 23 September 1980 Ogden, Utah
m 13 July 2005 Ogden, Utah



DENA LEIFSON
b 19 March 1981
San Jose, CA
California



ARTHUR GEORGE GODDARD
b 19 February 1922 Watford, England
m 27 September 1947 Watford England
d 17 March 2010 Birmingham, England



LESLIE RONALD GODDARD
b 19 February 1922 Watford, England
m 27 September 1947 Watford England
d 17 March 2010 Birmingham, England



ETHEL LOUISE ROUSE
b 19 February 1922 Watford, England
m 27 September 1947 Watford England
d 17 March 2010 Birmingham, England



LYNDA VALERIE GODDARD
b 24 April Watford, England
m 6 September 1965 Kensington, England
m 22 September 1995 Salt Lake City, Utah



MICHAEL ANGELASTRO
b 7 July 1944
New York



ALFRED JAMES QUICK
b 19 February 1922 Watford, England
m 27 September 1947 Watford England
d 17 March 2010 Birmingham, England



DORIS MAY QUICK
b 31 July 1926 Watford, England
m 27 September 1947 Watford England
d 7 December 2007 Birmingham, England



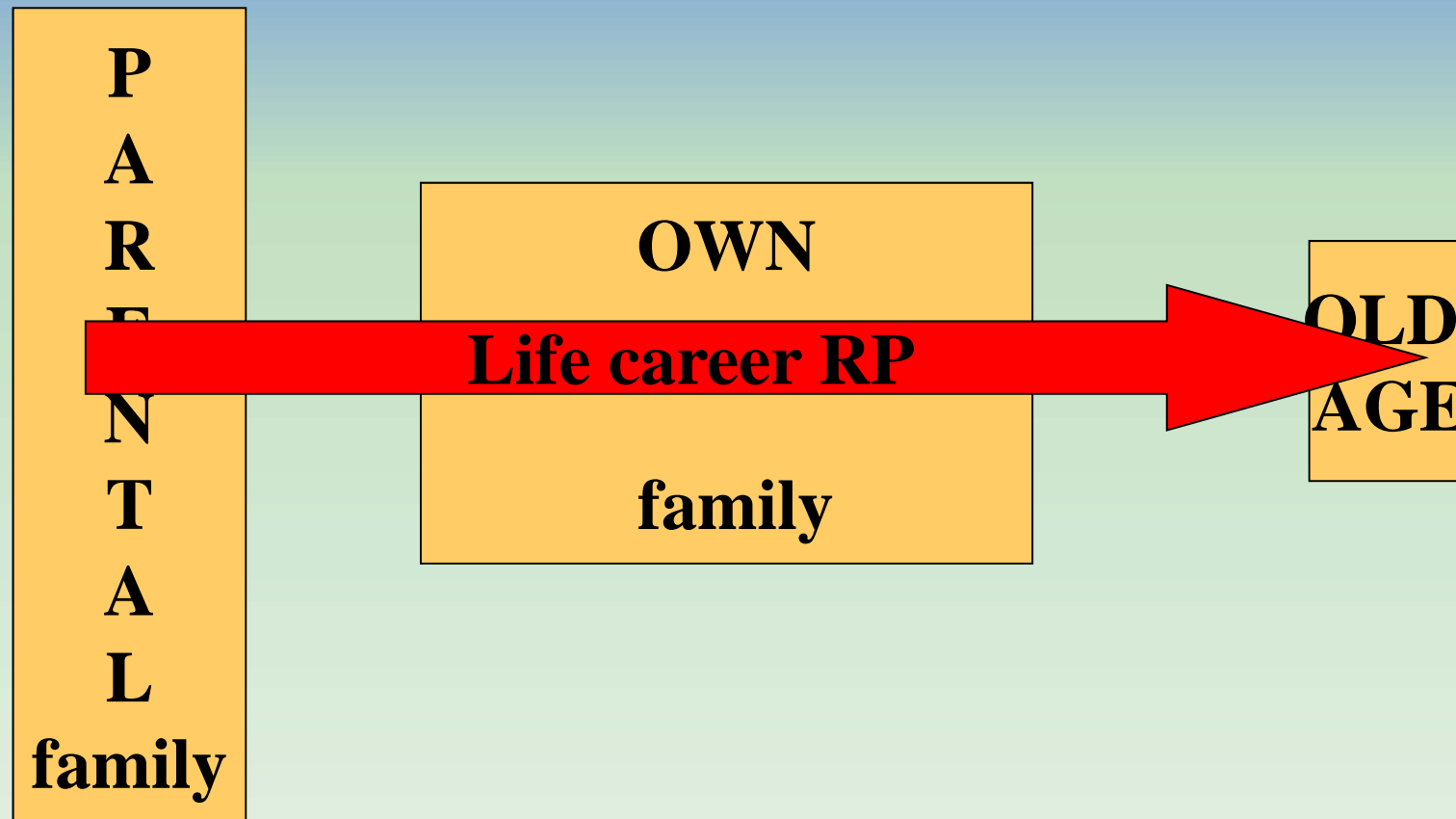
GRACE LOUISE CARNEY
b 19 February 1922 Watford, England
m 27 September 1947 Watford England
d 17 March 2010 Birmingham, England



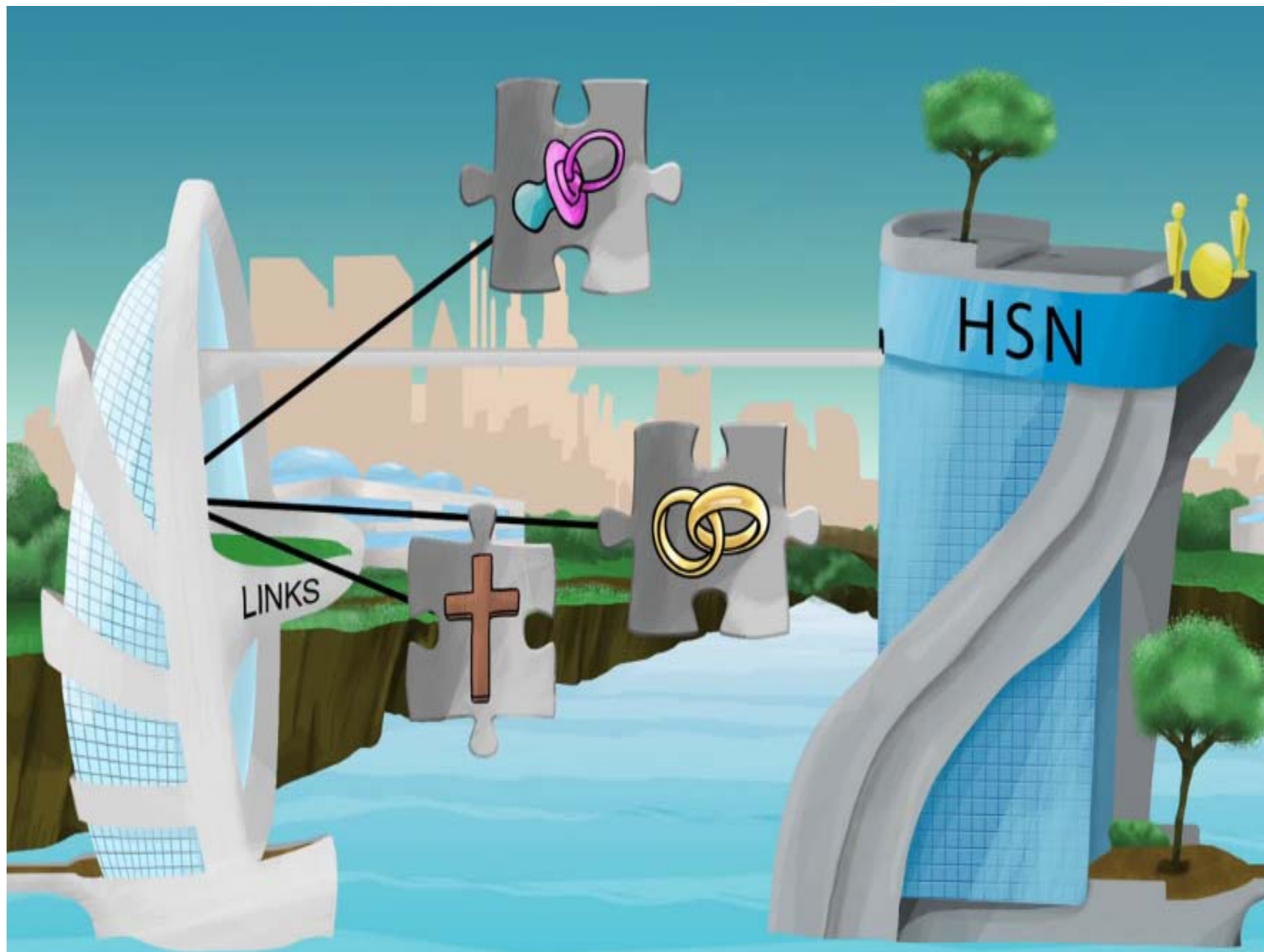


Historical Sample of the Netherlands

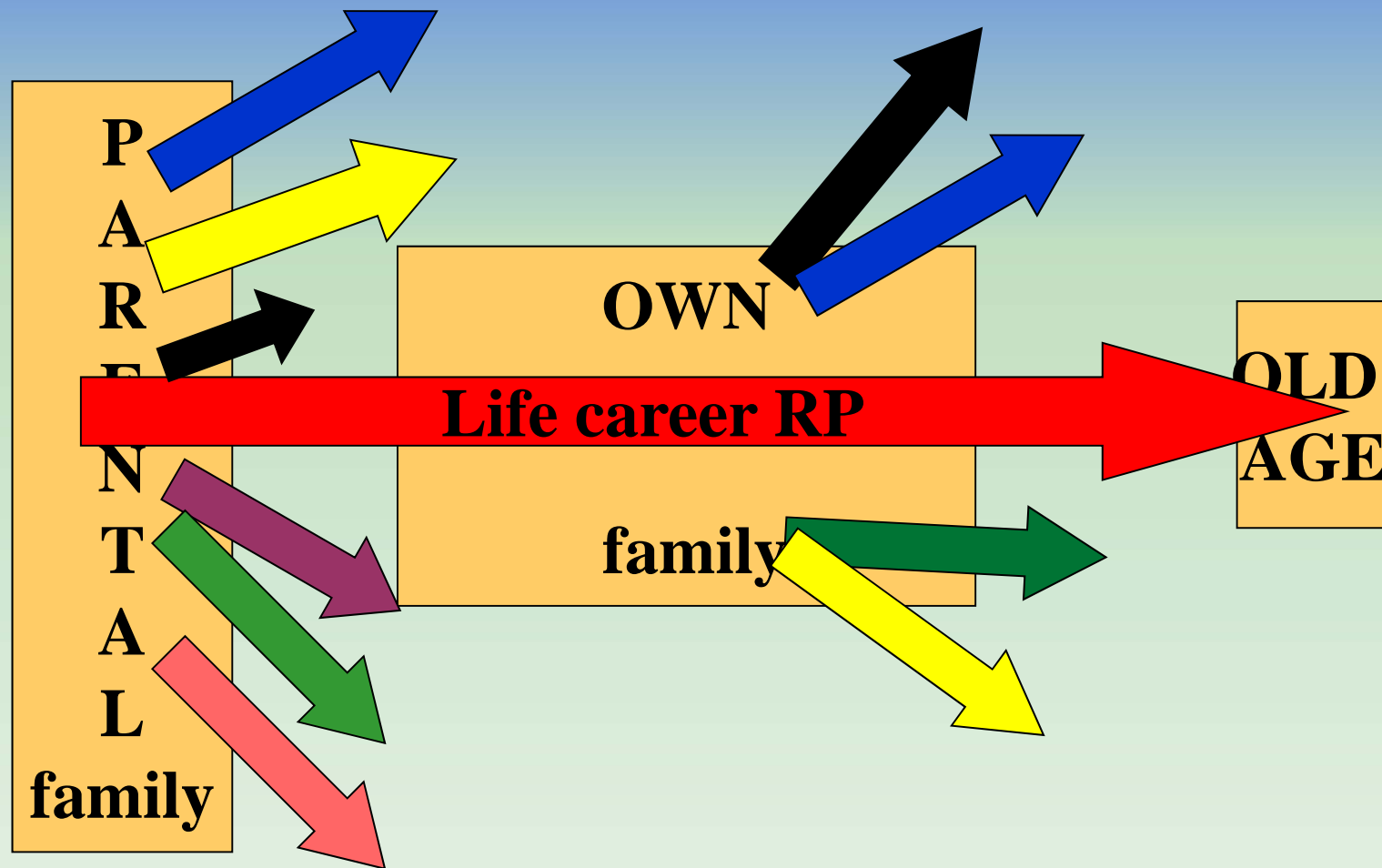
Standard HSN Life Course

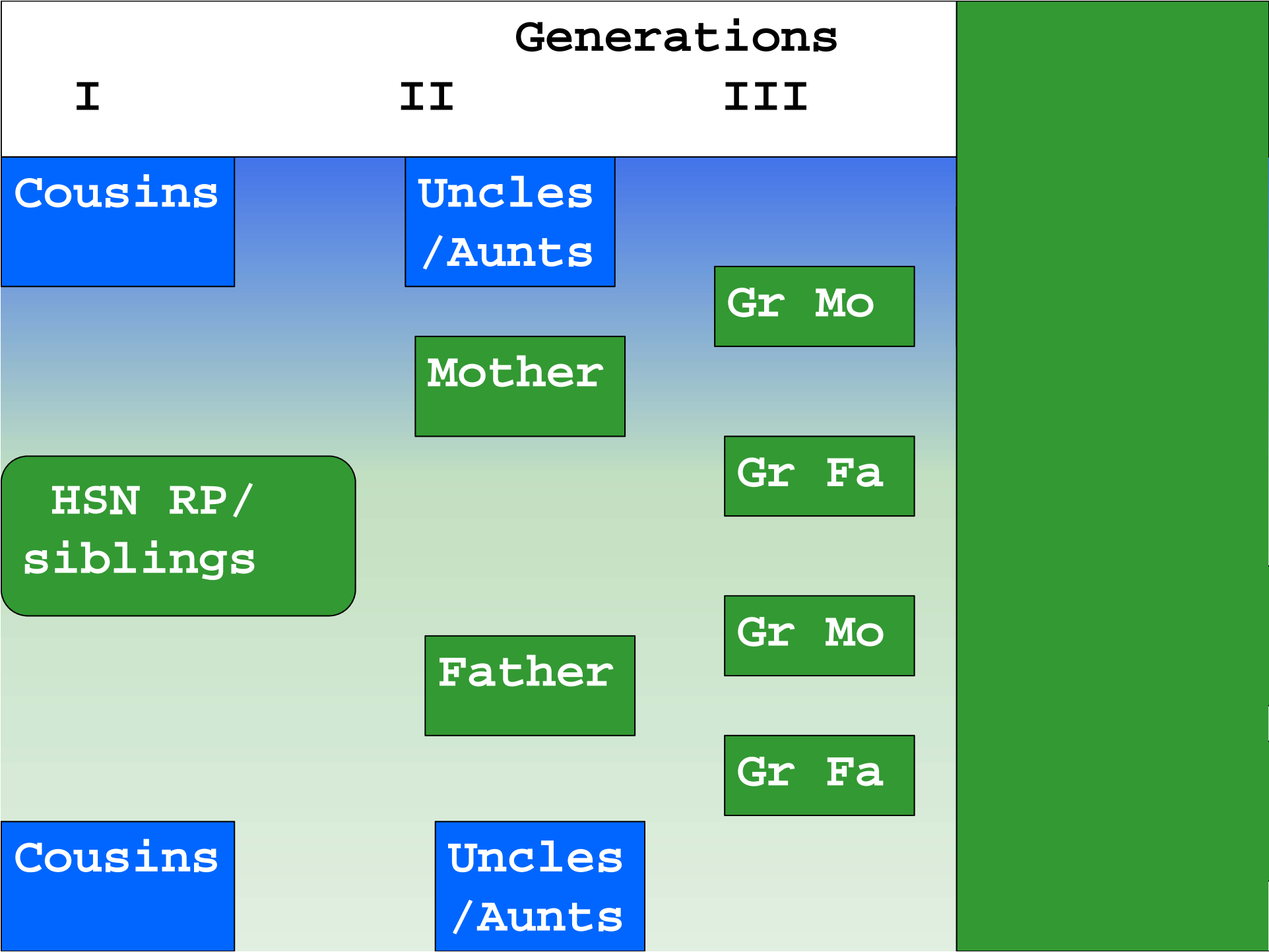






Standard HSN Life Course





HSN/LINKS and Genetics

Two ways:

**A Starting with HSN persons
(tree approach / linking with
modern registration)**

**B Linking outcomes of persons
(pedigree approach)**

HSN/LINKS and Genetics

A -> DNA Molecular Genetics

B -> Pedigrees Behavior Genetics

C -> Combinations



GGR

Genes, Germs and Resources

**The role of the family and the disease
environment in mortality and longevity in the
Netherlands, 1812-2015**



**Angélique Janssens (RUN)
Eline Slagboom (LUMC)**





GGR

Genes, Germs and Resources

Two Samples from cohort 1860-1875:

> 80-years old (deceased after 1940)

> 40–65 years old

Data entry second generation

Data entry third generation (-> Registerdata / LUMC)

Data entry fourth generation (-> Registerdata / LUMC)

1) Vergel. met gebakte (dagt. en pers.)		2) Gesl. 112267	
3) Geboortenaam		4) op. Geboortenaam 1885	5) Kerkel. ges. RK
6) Hendrikus--		7) pers. Tongelre (thans Gem Eindhoven)	8) Beroep (n-o) sigarenmaker(o)
		9) ond./land ven)	10) feb arb Ph
11) Nat. Ned			
12) Gesl. naam en 13) Voornamen			
14) Geboortenaam , Wilhelmina		15-16) Geboren op 28 Feb 85	17) Huwel. gesl. op 8 Sep 13
		18) Woensel (Ehv)	19) Woensel (Ehv)
20) Geboortenaam		21) op	22) door
23) Geboortenaam		24) op	25) door
26) Geboortenaam		27) op	28) door
29) Geboortenaam		30) op	31) door
32) Geboortenaam		33) op	34) door
35) Geboortenaam		36) op	37) door
38) Geboortenaam		39) op	40) door
41) Geboortenaam		42) op	43) door
44) Geboortenaam		45) op	46) door
47) Geboortenaam		48) op	49) door
50) Geboortenaam		51) op	52) door
53) Geboortenaam		54) op	55) door
56) Geboortenaam		57) op	58) door
59) Geboortenaam		60) op	61) door
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71) Geboortenaam		72) op	73) door
74) Geboortenaam		75) op	76) door
77) Geboortenaam		78) op	79) door
80) Geboortenaam		81) op	82) door
83) Geboortenaam		84) op	85) door
86) Geboortenaam		87) op	88) door
89) Geboortenaam		90) op	91) door
92) Geboortenaam		93) op	94) door
95) Geboortenaam		96) op	97) door
98) Geboortenaam		99) op	100) door

Dit uittreksel bevat niet-vrije gegevens en is uitsluitend bestemd voor beperkt gebruik in het kader van het HSN-project, conform de leveringsvoorwaarden van het Centraal Bureau voor Genealogie, vastgelegd bij brief van 29 mei 1998.

R

17) A.H.O. Opmerking	18) Geboortedatum en 29) Voornamen	19-20) Geboorte	21) Verh. (volgens)	22) Aanvullende gegevens
1 H 26 Jun 42	....., Johanna Antonia Cor	20 Jun 14	d	
2 H 30 Apr 43	..... nelli	14 Tongelre (Ehv)	d	
	..... Thomasina Cornelia	14 Jan 17	d	
	..... Martine Cornelia	29 Tongelre (Ehv)	d	
	..... Francisca Gordina Cornelia	29 Aug 19	d	
	..... Thomas Cornelis Maria	21 Tongelre (Ehv)	d	
	..... Gordina Maria Cornelia Tho-	21 Jan 21	d	
	resie	Eindhoven		
		23 Mei 24	z	
		Eindhoven		
		2 Apr 28	d	
		Eindhoven		

34 Overleden te EINDHOVEN

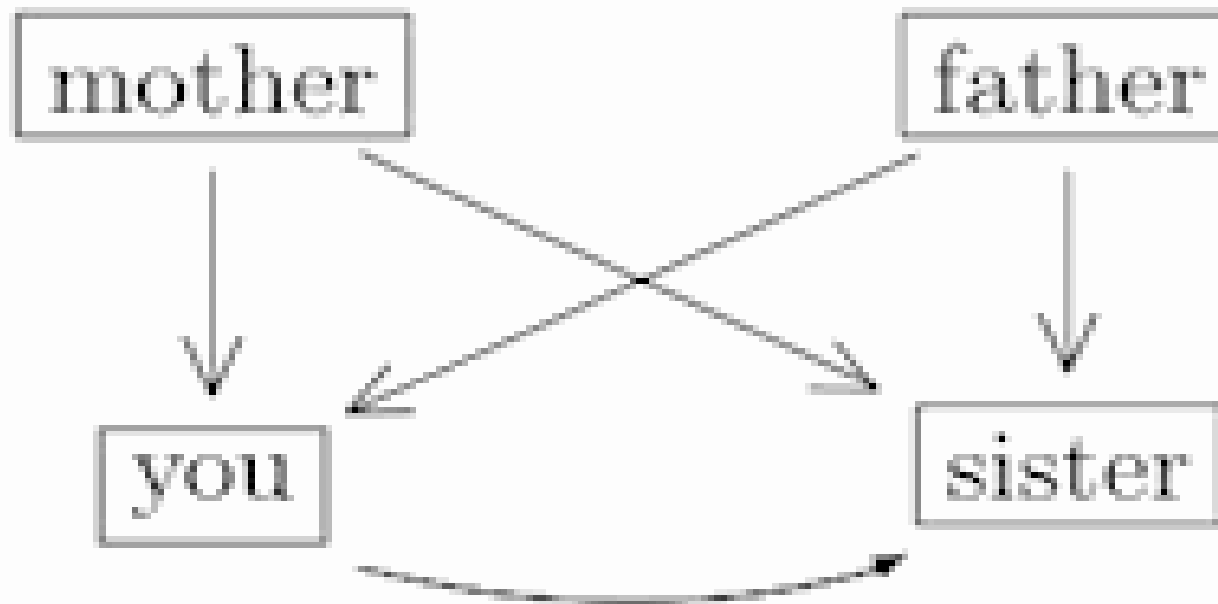
op ~~.....~~ Akte No. ~~.....~~

1) Geboortedatum en 29) Voornamen		2) Verh. (volgens)		3) Aanvullende gegevens	
1. , Wilhelmina		2. 1885		3. 112267	
2. Hendrikus		3. Tongelre (thans Gem Eindhoven) (oud. van)		4. 1885	
3. 28 Feb 85		4. 8 Sep 13		5. 1885	
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81. 28 Feb 85		82. 8 Sep 13		83. 1885	
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86. 28 Feb 85		87. 8 Sep 13		88. 1885	
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93. 28 Feb 85		94. 8 Sep 13		95. 1885	
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95. 28 Feb 85		96. 8 Sep 13		97. 1885	
96. 28 Feb 85		97. 8 Sep 13		98. 1885	
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98. 28 Feb 85		99. 8 Sep 13		100. 1885	



Behavioral Genetics

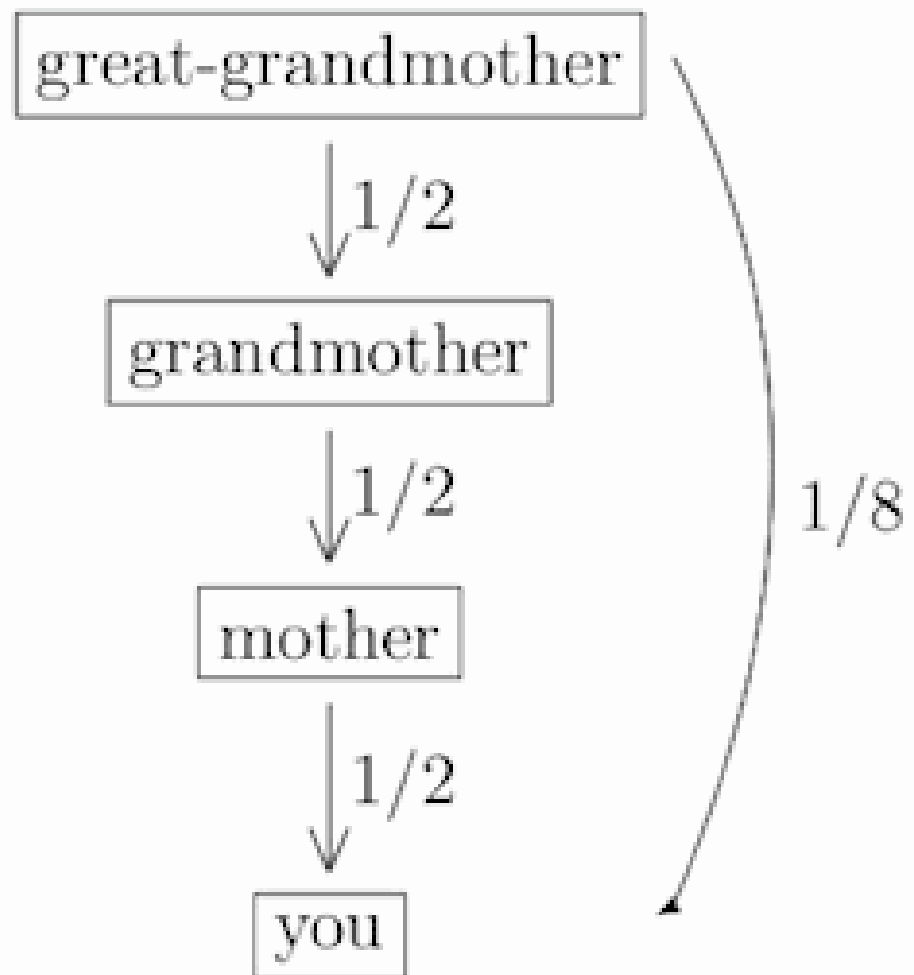
Generations				
I	II	III	IV [V]	
Cousins	Uncles /Aunts	Gr Mo	Gr Gr Fa Gr Gr Mo	
	Mother		Gr Gr Fa Gr Gr Mo	
HSN RP/ siblings		Gr Fa	Gr Gr Fa Gr Gr Mo	
	Father	Gr Mo	Gr Gr Fa Gr Gr Mo	
		Gr Fa	Gr Gr Fa Gr Gr Mo	
Cousins	Uncles /Aunts			



$$1/4 + 1/4 = 1/2$$

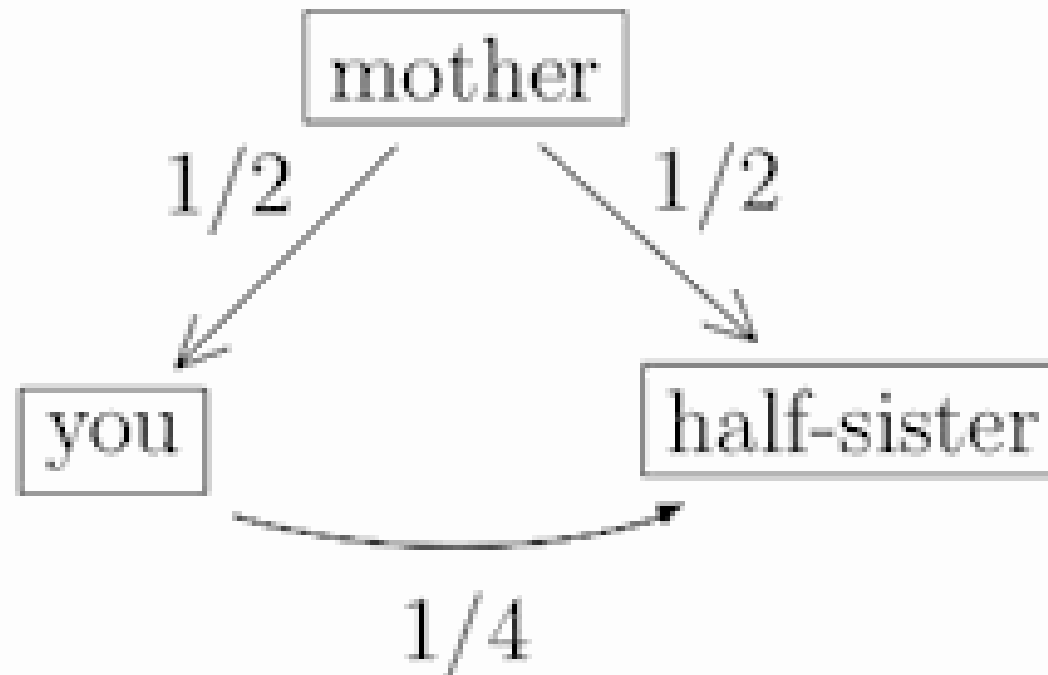
Generations				
I	II	III	IV	[V]
Cousins	Uncles /Aunts	Gr Mo	Gr Gr Fa Gr Gr Mo	
	Mother		Gr Gr Fa Gr Gr Mo	
HSN RP/ siblings		Gr Fa	Gr Gr Fa Gr Gr Mo	
	Father	Gr Mo	Gr Gr Fa Gr Gr Mo	
		Gr Fa	Gr Gr Fa Gr Gr Mo	
Cousins	Uncles /Aunts			

Behavioral Genetics



Behavioral Genetics

Generations				
I	II	III	IV	[V]
Cousins	Uncles /Aunts	Gr Mo	Gr Gr Fa Gr Gr Mo	
	Mother		Gr Gr Fa Gr Gr Mo	
HSN RP/ siblings		Gr Fa	Gr Gr Fa Gr Gr Mo	
	Father	Gr Mo	Gr Gr Fa Gr Gr Mo	
		Gr Fa	Gr Gr Fa Gr Gr Mo	
Cousins	Uncles /Aunts			



Relationship to you	relatedness coefficient
yourself	1
identical twin	1
parent, child	1/2
grandparent, grandchild	1/4
great-grandparent, great-grandchild	1/8
n^{th} level ancestor or descendant	$1/2^n$
sibling (sister or brother)	1/2
half-sibling	1/4
aunt, uncle	1/4
niece, nephew	1/4
great-aunt, great-uncle	1/8
great-niece, great-nephew	1/8
first-cousin	1/8
first-cousin-once-removed	1/16
second-cousin	1/32
second-cousin-once-removed	1/64
third-cousin	1/128
n^{th} cousin	$1/2^{2n+1}$
n^{th} cousin, m times removed	$1/2^{2n+m+1}$
stranger	0

Generations				
I	II	III	IV	[V]
Cousins	Uncles /Aunts		Gr Gr Fa Gr Gr Mo	
	Mother	Gr Mo		
		Gr Fa	Gr Gr Fa Gr Gr Mo	
HSN RP/ siblings		Gr Mo	Gr Gr Fa Gr Gr Mo	
	Father	Gr Fa	Gr Gr Fa Gr Gr Mo	
Cousins	Uncles /Aunts		Gr Gr Fa Gr Gr Mo	

LINKS

Chains of interlinked generations

- Marriages of cousins
- Marriages of uncles/aunts with
nieces/newphews
- Marriages great great parents etc

Generations				
I	II	III	IV	[V]
Cousins	Uncles /Aunts		Gr Gr Fa	
		Gr Mo	Gr Gr Mo	
	Mother			
		Gr Fa	Gr Gr Fa	
HSN RP/ siblings			Gr Gr Mo	
	Father	Gr Mo	Gr Gr Fa	
			Gr Gr Mo	
		Gr Fa	Gr Gr Fa	
Cousins	Uncles /Aunts		Gr Gr Mo	

LINKS

Chains of generations (passing down...)

- Age of marriage
- Longevity
- Fertility etc

HSN and Health Data

- Causes of death 1938-1954
- Potential: 1850-1938
- Amsterdam, Maastricht, Roosendaal, Leeuwarden and more
- Link with register 1938-present
- GIANTS: Height, now for 60% of RP's
(and relatives: father, brothers, sons)

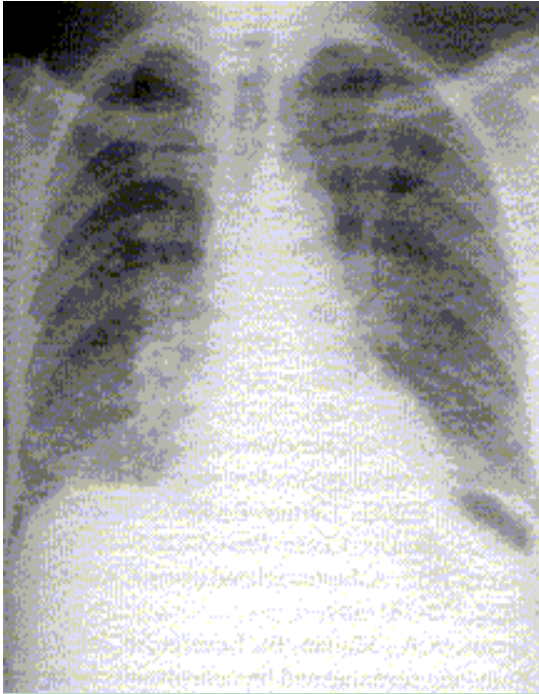


Causes of death

Nationally register since 1938

Linking by Dutch Statistics (incl. Statistical Analysis).

One study so far



Causes of death

The impact of early-life economic conditions
on cause-specific mortality during adulthood

Gary Y. C. Yeung , Gerard J. van den Berg, Maarten Lindeboom
and France R. M. Portrait

Journal of Population Economics (2014), 27:895–919



Causes of death

14,520 Dutch individuals born in 1880–1918

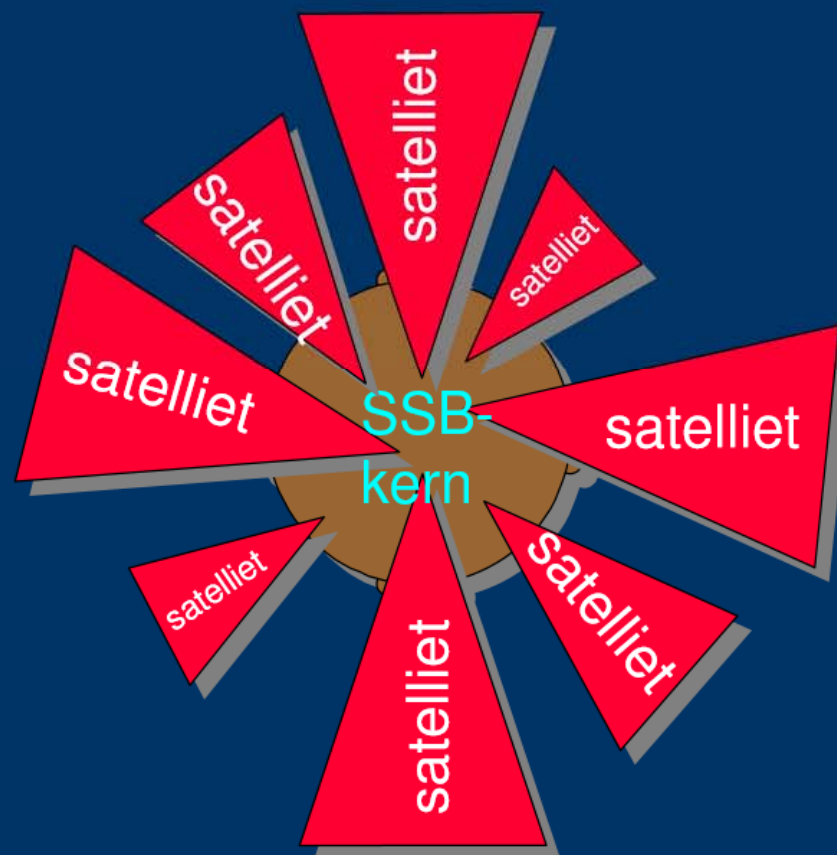
Exposure to recessions in early life appears to significantly increase cancer mortality risks (of older) and other mortality risks especially for older females (cardiovascular mortality).

System of Social Statistical Files

Based on Dutch Basic Registration Persons

Linked with all kind of other registrations

Linked with survey data



Central file of SSB

The Dutch Population Register (centralized) [BRP]

Other registers (tax, unemployment etc)

(New) identifiers for Persons, Adresses and Firms)

Satelites of SSB

Almost fiftye now,a.o.

The Dutch (virtual) Census

School carrier micro-data (restricted access)

Aggregate data (public)

Statistical Journal of the IAOS 30 (2014) 411–424

DOI 10.3233/SJI-140803 IOS Press

The System of social statistical datasets of Statistics Netherlands: An integral approach to the production of register-based social Statistics

Bart F.M. Bakker

Johan van Rooijena

Leo van Toora

Thanks



international institute
of social history

