The Impact of Language on Economic Behavior

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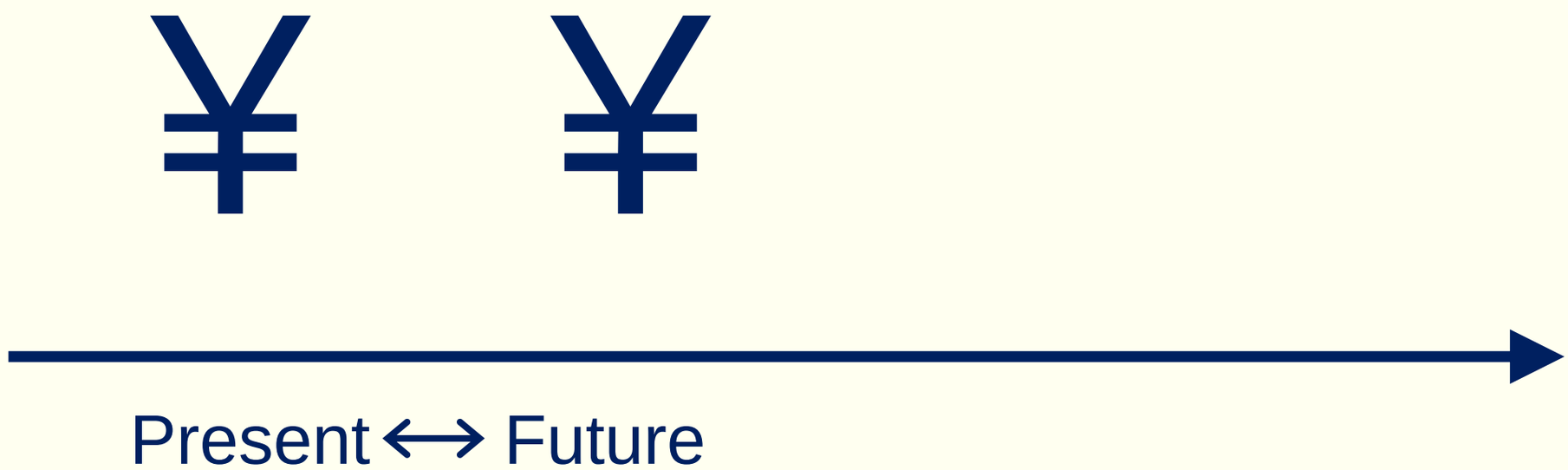
Futured Languages: Future is different than the present

Futureless Languages: Future is similar to the present



Data: Language and FTR

Dahl 2000 / Thieroff 2000: *Tense and Aspect in the Languages of Europe*

- *Leads to a binary classification, between "futureless" (or weak-FTR) languages (Chinese, Finnish, German, Japanese) and futured / strong-FTR languages (English, Greek, Italian, Russian).*

European Language Typology Project: the EUROTYP Data

Context: The boy is expecting a sum of money.	
Text to be Translated:	***Translation:***
If the boy GET the money, he BUY a present for the girl.	If the boy GETS the money, he WILL BUY a present for the girl.

Extending this characterization to non-European languages:

- Dahl and Kós-Dienes (1984), Awobuluyi (1982), Bybee, Perkins & Pagliuca (1994), Carrell (1970), Newman (2000), Nurse (2008), Thompson (1965)
- Online Data scraped from weather forcasts.

Average Savings Rate (% GDP), OECD: 1985-2010

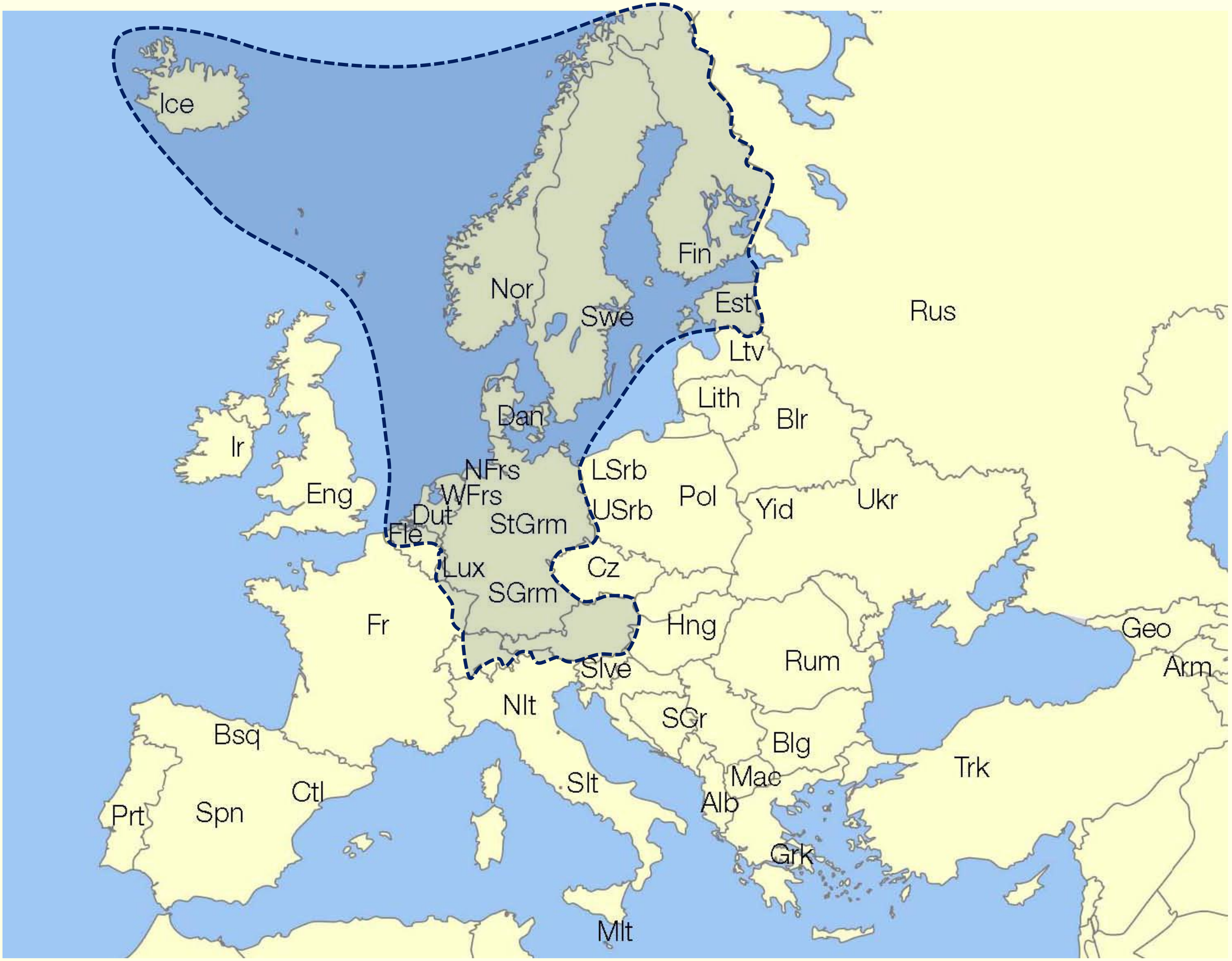
On average, countries which speak strong-FTR languages save 4.75% less. (t = 2.77, p = 0.009)

45
40
35
30
25
20
15
10
5
0

Luxembourg
South Korea
Russian Federation
Norway
Ireland
Switzerland
Japan
Czech Republic
Chile
Netherlands
Finland
Austria
Slovenia
Australia
Belgium
Denmark
Mexico
Sweden
Estonia
Slovak Republic
Spain
Hungary
Canada
New Zealand
Germany
Italy
Turkey
France
Iceland
Poland
Portugal
Israel
United Kingdom
United States
Greece

Weak-FTR languages

Strong-FTR languages

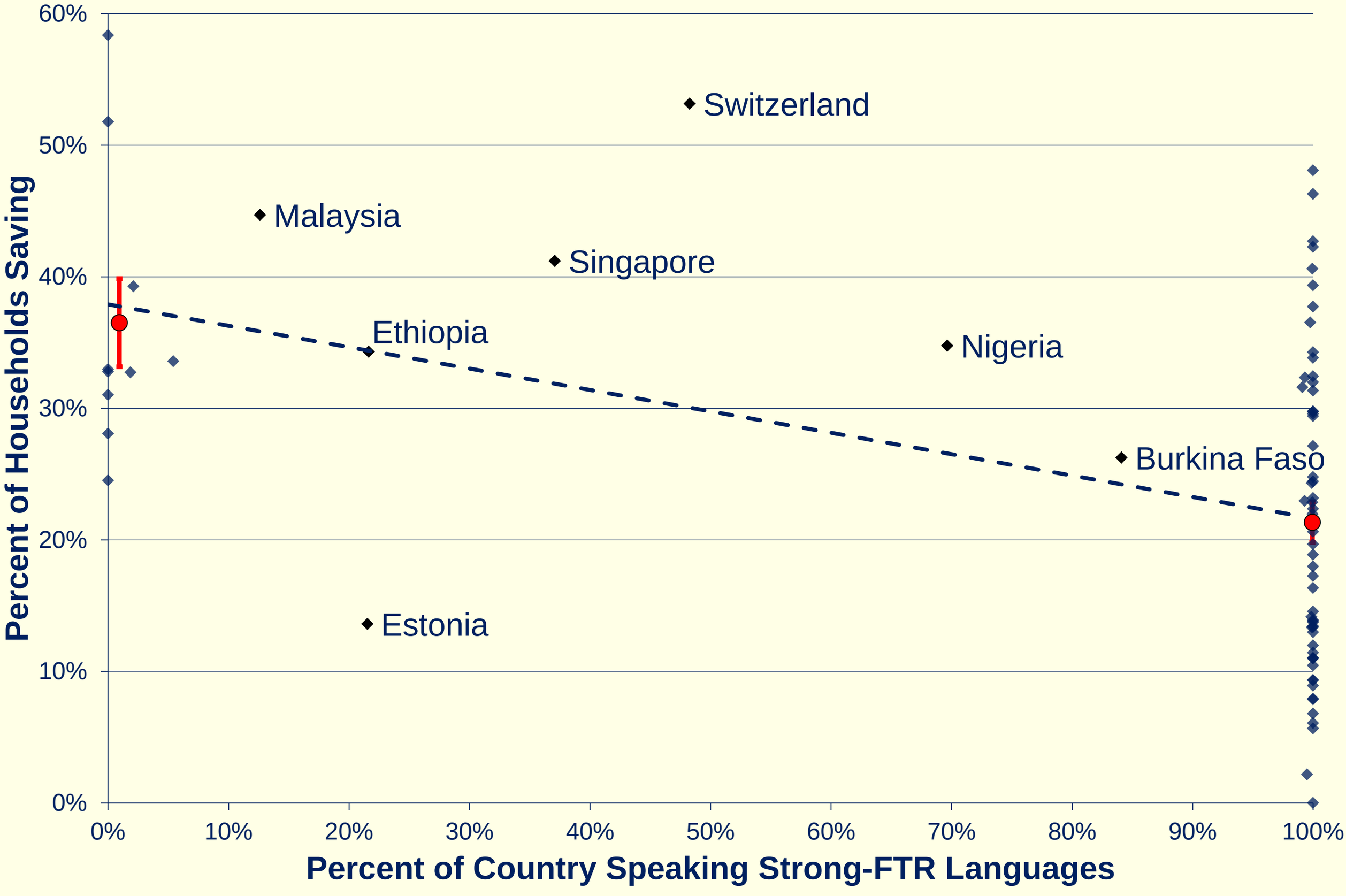

Ice
Nor
Swe
Fin
Est
Rus
Ltv
Lith
Blr
Dan
Ir
Eng
NFrs
WFrs
Dut
Fle
StGrm
LSrb
USrb
Pol
Yid
Ukr
Lux
Cz
SGrm
Fr
Hng
Slve
Rum
Geo
Arm
Nlt
SGr
Bsq
Blg
Trk
Mac
Slt
Ctl
Alb
Prt
Spn
Grk
Mlt

Western Europe	Eastern Europe	Africa + Middle East	Australia + Asia
Basque, Greek, Irish	Azerbaijani, Macedonian, Montenegrin, Turkish, Ukrainian, Uzbek	Akan, Ewe, Ga, Hausa, Igbo, Kurdish	Alawa, Bandjalang, Kammu, Korean, Tagalog, Thai
Catalan, French, Galician, Italian, Romansh, Spanish, Portuguese	Romanian, Moldavian	Arabic, Hebrew, Tigrinya	
	Georgian		Kannada, Tamil, Telugu
	Latvian, Lithuanian	Dagbani, Tenyer (Karaboro)	
	Serbo-Croatian, Belorussian, Bulgarian, Czech, Polish, Russian, Slovak, Slovene	Bemba, Chichewa, Lozi, Sotho, Sesotho, Swahili, Tsonga, Tswana, Xhosa, Zulu	Bengali, Gujarati, Hindi, Kashmiri, Panjabi, Urdu
	Albanian, Armenian		
Afrikaans, English	Hungarian	Isekiri	
Danish, Dutch, Flemish, German, Icelandic, Norwegian, Swedish	Estonian, Morvin	Yoruba	Cebuano, Indonesian, Japanese, Javanese, Malay, Maori, Sudanese, Vietnamese
		Amharic	
Finnish		Kikuyu	
Maltese		Beja, Bambara, Oromo, Persian, Wolof	Cantonese, Hakka, Mandarin

Futured

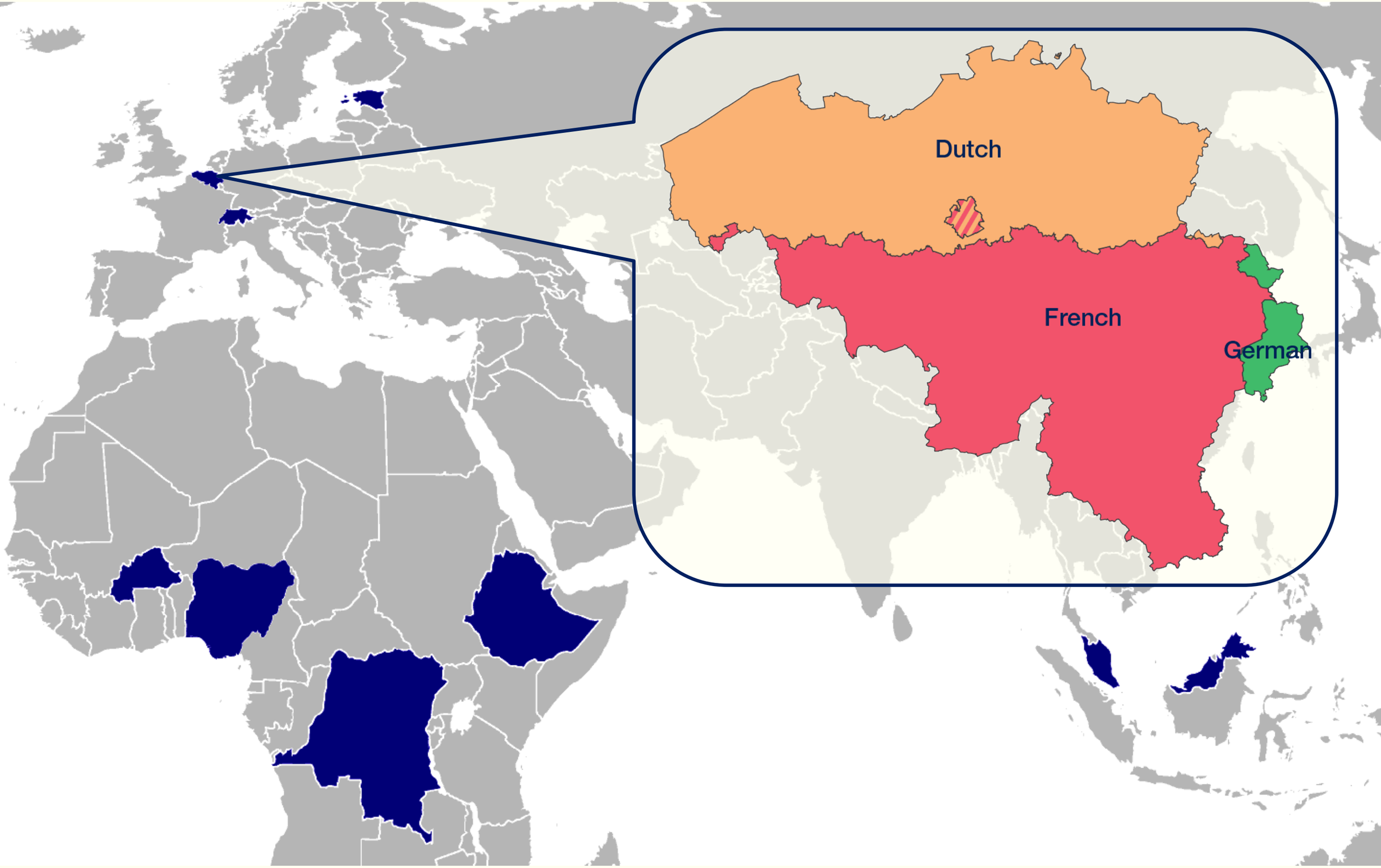
Futureless

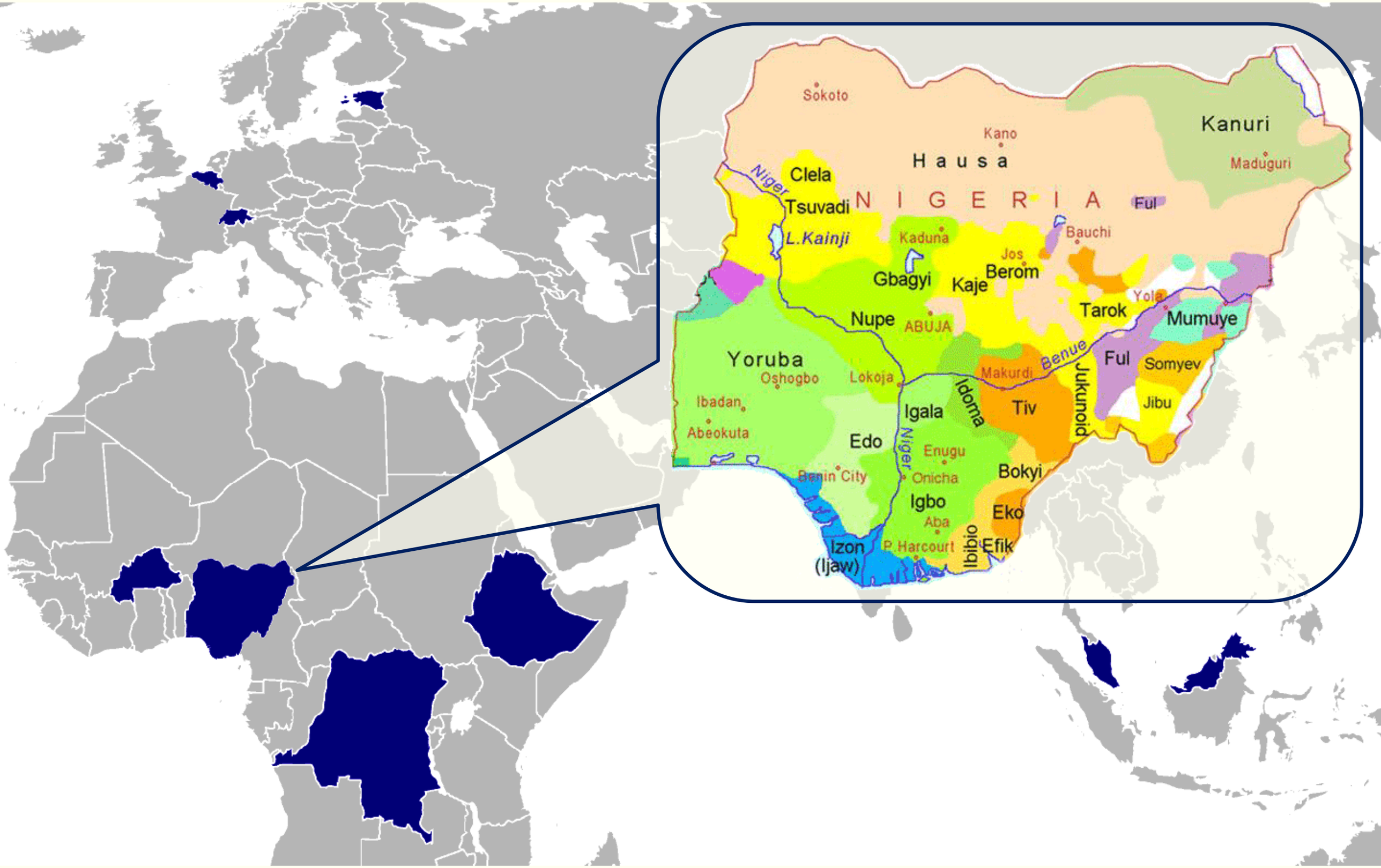
Rates of Savings Across the World

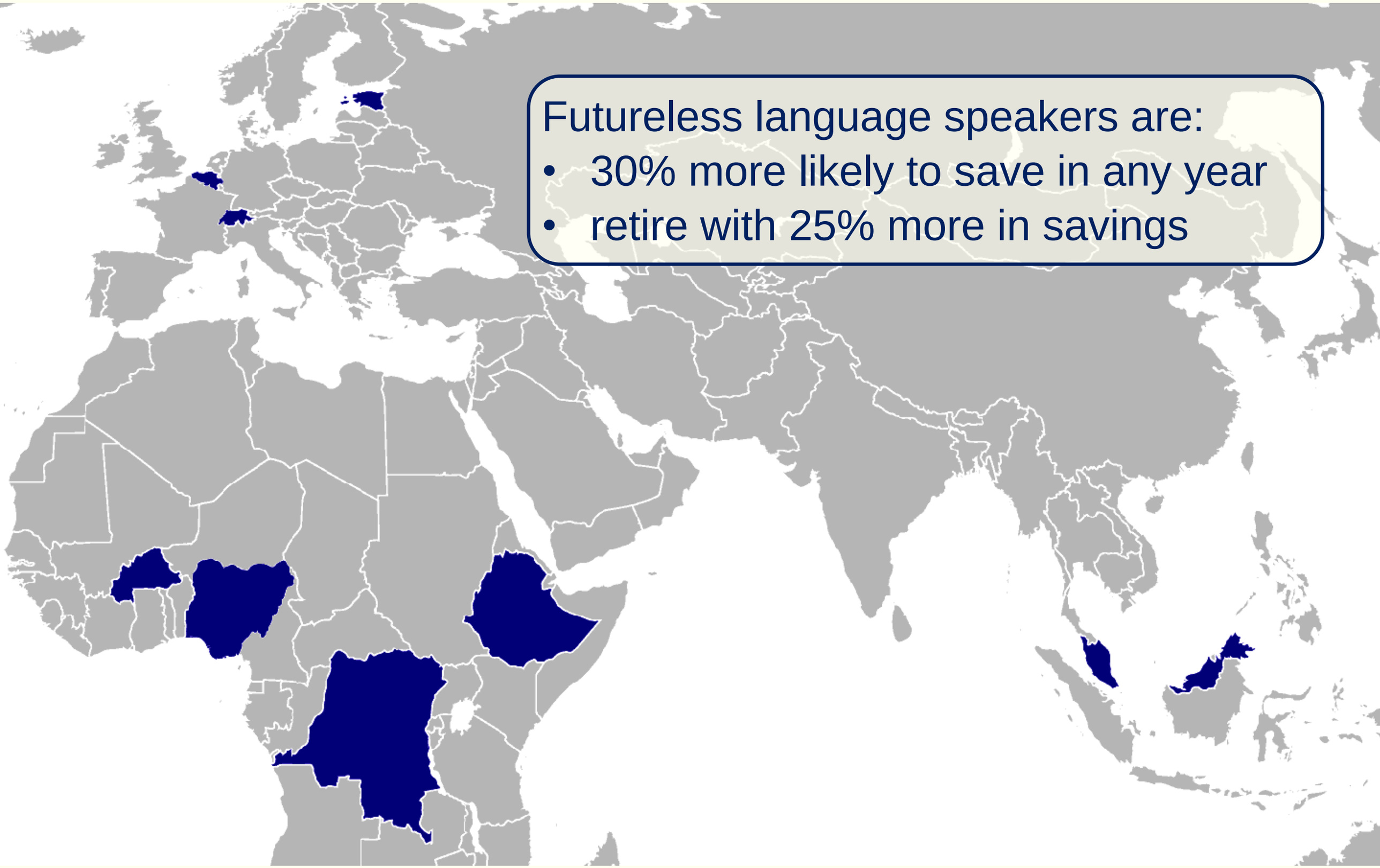


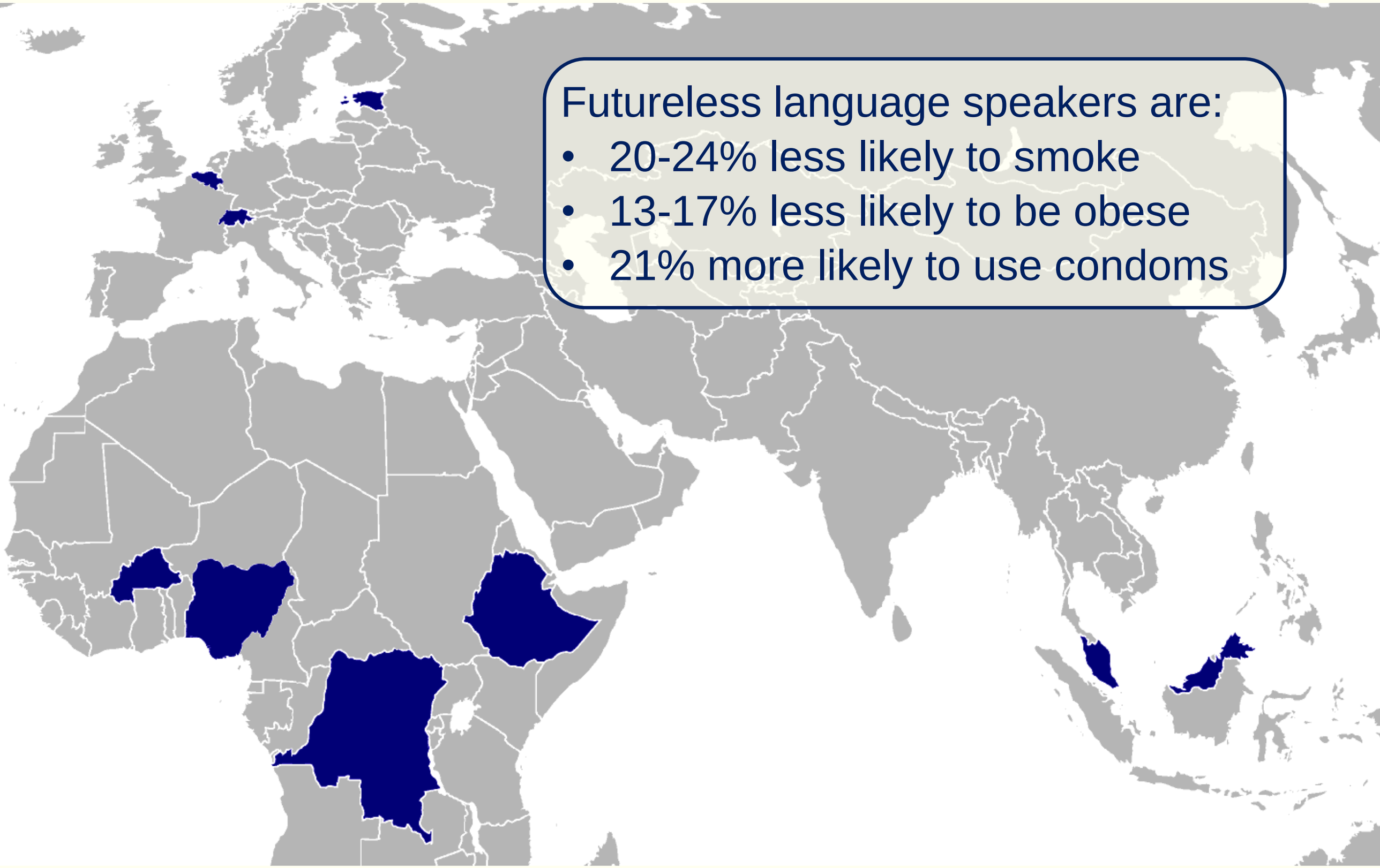
Match families on:

- Country of birth and residence
- Demographics (Sex, Age,…)
- Income (10)
- Education (6)
- Marital status (6)
- Number of children
- Religion (72)


Dutch
French
German


Sokoto
Kano
Kanuri
Maduguri
Hausa
Clela
Niger
Tsuvadi
NIGERIA
Ful
L.Kainji
Kaduna
Bauchi
Jos
Gbagyi
Kaje
Berom
Yola
Tarok
Mumuye
Nupe
ABUJA
Yoruba
Benue
Ful
Somyev
Oshogbo
Lokoja
Makurdi
Jukunoid
Idoma
Ibadan
Igala
Tiv
Jibu
Abeokuta
Edo
Niger
Enugu
Bokyi
Benin City
Onicha
Igbo
Eko
Aba
Ibibio
Izon
(Ijaw)
P.Harcourt
Efik


Futureless language speakers are:
• 30% more likely to save in any year
• retire with 25% more in savings


Futureless language speakers are:
• 20-24% less likely to smoke
• 13-17% less likely to be obese
• 21% more likely to use condoms

Effects of Language on Choice

$$C < \int_0^{\infty} e^{-\delta t} R dF(t)$$

Simple Savings Problem:

- Pay cost *C* now in exchange for future reward *R* > *C.*
- DM is uncertain about when *R* will occur, holds beliefs with distribution *F(t).*

Mechanism One: Attention Leads to Greater Precision

- Suppose $F_W(t)$ is a mean-preserving spread of $F_S(t)$,
- Since discounting is a convex function of time, timing uncertainty makes saving ***more*** attractive.
- So weak-FTR speakers will save more than their strong-FTR counterparts.

Mechanism Two: Differential Treatment Biases Beliefs

- If $\forall t, F_W(t) \geq F_S(t)$, or if $\delta_W < \delta_S$,
- then weak-FTR speakers will save more than their strong-FTR counterparts.

Evidence on Language and Attention

- *Color:* Brown & Lenneberg (1954), Winawer et al. (2007), Franklin et al. (2008)