

#### The Power Language Index

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Hello



# There are ~6,000 active languages in the world

But two thousand of them have fewer than a thousand speakers



Earliest signs of human language date back 60-100 thousand years. Oldest written forms of languages traced to the Near East circa 26<sup>th</sup> century BC.



Now 7 billion people speak thousands of languages across the globe. But just 15 languages account for half of the languages spoken in the world.



#### Not all languages are equal

Mandarin Chinese counts nearly 1 billion native speakers



If the world "hello" were written in their scripts in proportion to the number of native speakers for 30 prominent languages

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### Thought experiment: Most useful language

If an alien were to land on the Earth, which language would serve it best?



Assume that the alien has similar ambitions to humans, with a desire to travel, earn a livelihood, communicate with others, consume media, acquire/share knowledge, and perhaps even engage in high-level diplomacy.



# Create index to compare efficacy of languages

Opportunities: geography, economy, communication, K&M, diplomacy





# Geography (travel)

Language enables travel





Number of countries in which language is spoken\*



Geographic area of the countries in which language is spoken



Overnight international tourists in countries associated with language



#### Economy

#### Language enables economic participation





GDP and GDP/cap



Exports (share of world)



FX market share (2-way)



SDR composition





#### Communication

Language enables communication





## Knowledge and media

Language enables the consumption of knowledge & media





Internet content

Feature films\*



Elite universities







#### **Diplomacy** Language enables diplomacy



Just 9 languages are used in high-level international diplomacy!

# Results: English is the global language

Mandarin Chinese growing in power but remains a distant second

Rank	Language	Score	Native	Geography	Economy	Comm.	K&M	Diplomacy
1	English	0.902	446.0	1	1	1	1	1
2	Mandarin	0.403	960.0	6	2	2	3	6
3	French	0.335	80.0	2	6	5	5	1
4	Spanish	0.331	470.0	3	5	3	7	3
5	Arabic	0.274	295.0	4	8	6	19	4
6	Russian	0.242	150.0	5	13	10	8	5
7	German	0.190	92.5	8	3	7	4	8
8	Japanese	0.127	125.0	27	4	22	6	7
9	Portuguese	0.119	215.0	7	19	13	12	9
10	Hindi	0.104	310.0	13	16	8	2	10*

*NB: This table does not group the Chinese languages as one and also makes distinct Hindi and Urdu (if Hindi and Urdu were grouped as one language it would surpass Japanese in the ranking)* 



- Mapping variables to languages not always straightforward as most indicators are captured at nation-state level
- Many countries have several languages associated with them, and official status of a language within a country is not equivalent to knowledge of a language within it
- The difference between a language and a dialect is not always clear (e.g. Chinese languages/dialects, Hindi and Urdu, etc.)

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#### Growth of English

British empire and apex Americana made English dominant





What do you call someone who speaks 3+ languages? A polyglot.

What do you call someone who speaks 2 languages? A bilingual?

What do you call someone who speaks just one language? An American (or Brit).

#### **CASE STUDY: SINGAPORE**

- English was chosen as an official and the *de facto* working language of Singapore
- Yet none of the population are native English speakers
- English was chosen because it would not favour any of the ethnic communities, plus it is acknowledged as globally important (and there is a history of British legacy)
- Positive herding/network effect (and less negative recent history)

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# But PLI is likely underestimating English

Consider the case of Aruba, where English does not have any status





## Calculate the PLI for languages in Aruba

Assume person arrives in Aruba and wants to partake in its life



- To apply the PLI methodology to the languages in Aruba requires a few modifications:
  - The perspective of the efficacy of languages is different as the challenge is to define their power relative to life in Aruba (so delete diplomacy)
  - The usage of alternative indicators when data are not available or applicable
- Even as English has no official status, it is the dominant language in Aruba according to the PLI

Rank	Language	Score	Native	Geography	Economy	Comm.	K&M
1	English	0.591	7,205	1	2	2	1
2	Papiamento	0.459	70,430	3	3	1	3
3	Dutch	0.450	6,191	2	1	5	2
4	Spanish	0.242	13,903	4	4	3	4
5	French	0.129	1,218	5	5	4	7
6	German	0.073	N/A	6	9	6	9
7	Portuguese	0.070	N/A	7	6	8	6
8	Chinese	0.054	1,522	10	11	7	8



# PLI likely underestimating power of English

Aruba example shows how English is dominant in a non-English country

"Bilingual" means the home language and English

"International" means offering services in English



# The global elite is an English-speaking club

Weak English proficiency limiting influence of o/w large countries





#### Evolution over time

Although English is now dominant it was not always the case





# Steady state: One global language?

World is heading to one lingua franca with pockets of regional languages



No knowledge of English in the globalised age is equivalent to being illiterate. But will world converge to just one language?



One single language not the likely outcome – people are attached to their language. English is the global *lingua franca;* other powerful languages as regional tongues.

# Death of translators and polyglotism?

Will technology obviate the need for learning other languages?



Most dictionaries cover only a fraction of the active language vocabulary (which itself changes over time and is region specific)

"In the long run, we are all dead." John M. Keynes **X**A

Google Translate has just ~100 languages in its database

Technologies will arrive that will tear down linguistic barriers, but language is also cultural and...



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## Language as a tool for success

Many benefits of learning a second (or third) language



Bilinguals in Canada earn (4 to 8 per cent) more than unilinguals (Christofides & Swidinsky, 2010). True across countries – but (income) gains are usually small.







Studies have also shown that people's behaviours/personality and criticalness in thinking are influenced by language (Keysar et al., 2012).



www.KaiLChan.ca Sources: Christofides & Swidinsky (2010): "The economic returns to a second official language." Canadian Public Policy Vol 36(2) pp 137-158 June. Keysar et al. (2012): "The foreign language effect." Psychological Science 2012 23: 661

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# Although English is the most powerful language

True power comes from learning a second (or third) tongue

# Masha Danki Thank you g Dank je Gracias <sup>J</sup>brigado



#### Annex 1

#### Calculation of PLI score for French

IND #	INDICATOR	OPPORTUNITY	WEIGHT	FRENCH	МАХ	SCORE
1.1	Countries spoken*	Geography	5.63%	24.5	42.5	0.576
1.2	Land area	Geography	11.25%	13.6	37.1	0.367
1.3	Tourists (inbound)*	Geography	5.63%	125.0	202.9	0.616
1	GDP (PPP)	Economy	6.43%	4,949	31,160	0.159
.2	GDP/capita (PPP)*	Economy	3.21%	12,877	66,427	0.194
.3	Exports	Economy	6.43%	1,434	4,418	0.325
.4	FX market*	Economy	3.21%	12.7	117.1	0.108
.5	SDR composition*	Economy	3.21%	7.2	50.4	0.143
1	Native speakers	Communication	7.50%	80	960	0.083
.2	L2 speakers*	Communication	3.75%	140	510	0.275
.3	Family size*	Communication	3.75%	773	1,368	0.565
.4	Tourists (outbound)	Communication	7.50%	68.9	250.3	0.275
.1	Internet content	Knowledge & media	7.50%	4.0	55.5	0.072
1.2	Feature films*	Knowledge & media	3.75%	364	2,380	0.153
.3	Elite universities	Knowledge & media	7.50%	44	216.5	0.203
.4	Academic journals*	Knowledge & media	3.75%	76	5,452	0.014
.1	IMF	Diplomacy	2.50%	1	1	1.000
.2	UN	Diplomacy	2.50%	1	1	1.000
.3	WB	Diplomacy	2.50%	1	1	1.000
5.4	Index of 10 SNOs	Diplomacy	2.50%	1.0	1.0	1.000
	Power Language Index		100.0%			0.339
Ξ.g.	Indicator: Countries spoken	x = 24.5	$\alpha = 5.63\%$	max = 42.5	s = 24.5 / 42.5 = 0.57	6

As all indicators are cardinal measures of language use, the final score of the index is also cardinal  $\in [0,1]$ 



#### Annex 2

#### Calculation of the score of FX market for French

CURRENCY	SHARE OF FX MKT	SHARE ATTRIBUTABLE TO FRENCH
CAD	4.6%	= 0.5 x 4.6% = 2.3%
CHF	5.2%	= 0.5 x 5.2% = 2.6%
EUR	33.4%	See below

COUNTRIES IN EUROZONE	GDP (\$MM)	SHARE ATTRIBUTABLE TO FRENCH	Г
Germany	3,874,437	0	ר
Austria	437,582	0	
Belgium	534,230	= 0.5 x 534,230	
Cyprus	23,263	0	%
Spain	1,406,538	0	53 53
Estonia	26,506	0	
Finland	272,649	0	
France	2,833,687	= 1.0 x 2,833,687	nch Dr
Greece	237,970	0	DZC
Ireland	250,814	0	
Italy	2,137,744	0	
Latvia	31,972	0	of
Lithuania	48,288	0	tat
Luxembourg	65,683	= 0.5 x 65,683	ehi iuc
Malta	10,514	0	tril S
Netherlands	880,716	0	at
Portugal	229,948	0	
Slovakia	99,869	0	
Slovenia	49,570	0	

If a language is "dominant", the total value of the indicator is associated with the language. If a language is " minority language", half of the value of the indicator is associated with the language.

CURRENCY	SHARE OF FX MKT	SHARE ATTRIBUTABLE TO FRENCH
CAD	4.6%	= 0.5 x 4.6% = 2.3%
CHF	5.2%	= 0.5 x 5.2% = 2.6%
EUR	33.4%	=23% x 33.4% = 7.8%

French share of eurozone GDP = 23%;FX market share attributable to French = 12.7%



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#### Annex 3

Calculation of the score of FX market for French

Language	Countries spoken	Status (r/p land area)	Tourists (inbound)	GDP (of Aruba)	GDP/cap (visitors)	Exports	Imports (r/p FX mkt)	Native speakers
English	42.5	0.0	619,097	0	58,281	49.753	776.2	7,205
Papiamento	3.0	1.0	10,618	2,991	13,620	4.187	9.8	70,430
Dutch	1.0	1.0	56,037	2,991	32,593	22.413	184.9	6,191
Spanish	21.0	0.0	137,325	0	8,533	87.190	139.9	13,903
French	24.5	0.0	9,151	0	45,077	2.278	94.7	1,218
Portuguese	8.0	0.0	11,265	0	9,895	N/A	44.3	N/A
German	5.0	0.0	4,812	0	44,550	0.443	7.3	N/A
Chinese	3.0	0.0	N/A	0	8,643	1.478	16.8	1,522
Russian	5.0	0.0	N/A	0	10,608	N/A	14.2	0
Italian	2.5	0.0	6,703	0	31,984	0.037	4.9	0

Language	L2	Family size	PLI score (r/p OBT)	Internet content	Radio (r/p films)	School + Uni + Admin	Newspapers (r/p journal)	Diplomacy (not in use)
English	91,336	13,396	0.889	55.5%	7.0	1.5	3	1.000
Papiamento	15,223	85,551	0.000	0.0%	5.0	0.5	4	0.000
Dutch	76,113	13,396	0.084	1.3%	1.5	3.0	1	0.000
Spanish	50,742	85,551	0.329	4.6%	2.5	0.5	0	0.950
French	N/A	85,551	0.337	4.0%	0.0	0.0	0	1.000
Portuguese	N/A	85,551	0.119	2.5%	0.0	0.0	0	0.025
German	N/A	13,396	0.191	5.8%	0.0	0.0	0	0.075
Chinese	N/A	0	0.411	2.8%	0.0	0.0	0	1.000
Russian	N/A	0	0.244	5.9%	0.0	0.0	0	0.825
Italian	N/A	0	0.108	1.9%	0.0	0.0	0	0.000