

Statistical Explanations of the EuLaViBar Scaling System

By Kari Djerf

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europaean language
diversity for all

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1 How to calculate the EuLaViBar scores?

The EuLaViBar consists of four different scores according to main focus areas: Capacity, Opportunity, Desire and Language Products. All focus area scores contain numeric values obtained from structured questions (i.e. numeric variables). Here we give examples on how to derive scores for each focus area and more exactly for each dimension (Legislation, Education, Media and Language Use and Interaction) inside the focus areas.

In addition, the Intergenerational Language Transmission is presented. Here we give the general description how to calculate each of the scores. The exact algorithms may be obtained from the University of Mainz.

In general, the numeric variables are treated question by question. Some questions contain a lot of sub-questions while some do not. Since the barometer score value range is restricted to $[0,4]$ many questions have to be recoded accordingly.

2 Questions which are included in the EuLaViBar

Note: **Language X** is the **minority language** subject to the study
Language Y is the **majority language** in the country (or area)

Q06 What is/are your mother tongue(s) (the language(s) you learned first)? If you have more than one language which you would call your mother tongue/first language, you can select more than one option.

- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg is the only mother tongue = 4 points,
else if MinLG and MajLG or MinLG and some other language are both mother tongues=3,
if MinLG was not learnt at all=0, missing otherwise.

Q07 Where have you learnt language X? (You can select more than one option.)

- at home (from my mother, my father, my grandparents, or somebody else in my childhood family)
- from friends, neighbours, spouse/partner, or colleagues
- at school or in a language course
- in another way, please specify: _____

- not at all.

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was learnt both at home and school and from friends etc. = 4 points,
else if MinLg was learnt both at home and school = 3 points
else if it was learnt at school and from friends or some other instance, or at home and from friends or some other instance=2 points,
else if one of the alternatives were crossed = 1 point
if not learnt at all=0 , missing otherwise.

Q08 What language(s) did/do your grandparents on your mother's side use with you? (You can select more than one option.) (You can select more than one option.)

- not applicable (my mother's parents were not alive or present in my life)
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
 if the MinLg was only used = 4 points,
 else if MinLG and MajLG were both used = 3,
 if MajLG or other was only used=0, missing otherwise.

Q09 What language(s) did/does your grandparents on your father's side use with you? (You can select more than one option.)

- not applicable (my father's parents were not alive or present in my life)
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
 if the MinLg was only used = 4 points,
 else if MinLG and MajLG were both used = 3,
 if MajLG or other was only used =0, missing otherwise.

Q10 What language(s) do/did your parents use between themselves? (If applicable, you can select more than one option.)

- Not applicable
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
 if the MinLg was only used = 4 points,
 else if MinLG and MajLG, or MinLG and some other language were both used=
 3,
 if MajLG or other was only used=0, missing otherwise.

Q11 What language(s) did your mother use with you in childhood? (If applicable, you can select more than one option.)

- Not applicable
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used = 3,
if MajLG or other was only used=0, missing otherwise.

Q12 What language(s) does your mother use with you now? (If applicable, you can select more than one option.)

- Not applicable
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used = 3,
if MajLG or other was only used=0, missing otherwise.

Q13 What language(s) did your father use with you in childhood? (If applicable, you can select more than one option.)

- Not applicable
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used = 3,
if MajLG or other was only used=0, missing otherwise.

Q14 What language(s) does your father use with you now? (If applicable, you can select more than one option.)

- Not applicable
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used
= 3,
if MajLG or other was only used=0, missing otherwise.

Q15 What language(s) did you / do you normally use with your siblings? (You can select more than one option.)

a. in your childhood:

- not applicable (I had no siblings or no contacts with my siblings)
- X
- Y
- Other language(s), please specify: _____

b. now:

- not applicable (I have no siblings or no contacts with my siblings)
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used
= 3,
if MajLG or other was only used =0, missing otherwise.

Note: Q15a and Q15b scaled separately.

$$Q15=(Q15a+Q15b)/2$$

Q16 What language(s) do you normally use with your current spouse/partner? (You can select more than one option.)

- not applicable (I don't have a spouse or a partner)
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used =
3,
if MajLG or other was only used =0, missing otherwise.

Q17 What language(s) do you normally speak with your children? (You can select more than one option.)

- not applicable (I don't have children)
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used =
3,
if MajLG or other was only used =0, missing otherwise.

Q18 What language(s) do you normally speak with your grandchildren? (You can select more than one option.)

- not applicable (I don't have grandchildren)
- X
- Y
- Other language(s), please specify: _____

Recoding: Scaling depends on the answers of the respondents:
if the MinLg was only used = 4 points,
else if MinLG and MajLG, or MinLG and some other language were both used
= 3,
if MajLG or other was only used = 0, missing otherwise.

Q19 When you were a child, did you ever notice that somebody tried to prevent your parents from using language X with you?

- Don't remember. No. Yes. The people who thought that parents shouldn't use language X were (you can select more than one option):
- family members or relatives.
- school personnel.
- others.

Recoding: If 'Yes' then value = 0,
 if "No" then value = 4, otherwise missing.

Q20 Do any persons or institutions today claim that parents should not use language X with children?

- Don't know.
 No.
 Some perhaps, but that's an exception rather than the rule.
 Yes, I think it is not unusual.

Recoding: If 'Yes' then value = 0,
 else if "Some" then value = 2,
 if "No" then value = 4, otherwise missing.

Q21 In the schools you attended, what language was the teaching medium (the language in which all the subjects, such as mathematics or geography, were taught)?

- Y only (all teaching, except possibly the language classes, was in Y)
 X only (all teaching, except possibly the language classes, was in X)
 X in *part* of the classes (except language classes) or in *part* of the schools I attended. The other language(s) used in the teaching was/were
- Y
 other language(s), please specify which:
-
- Other language(s) (specify which), but never X:
-

Recoding: Recoding by:
 If "X only" then value = 4,
 else if "X in part" then value = 2,
 if "Y only" or "Other language(s) only" then value = 0, missing otherwise.

Q22 Did you have X language classes (X as a subject, as mother tongue or as a foreign language) in school?

In pre-school (kindergarten):	<input type="checkbox"/>	No	<input type="checkbox"/>	Yes
In primary school:	<input type="checkbox"/>	No	<input type="checkbox"/>	Yes
In secondary/vocational school:	<input type="checkbox"/>	No	<input type="checkbox"/>	Yes

Recoding: originally coded by [0,1]. Recoding by
 "No" = 0, "Yes" = 4, other values missing
 All sub-questions taken separately

Scoring: $Q22=(Q22a+Q22b+Q22c)/3$

Q23 How would you evaluate your own knowledge of language X? Please tick the appropriate boxes.

	Perfectly (without any difficulties)	Well	Fairly well	Poorly	Not at all
I can speak language X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I understand language X (when spoken)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can write in language X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can read in language X	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Recoding: original codes "Perfectly"=4,..., "Not at all"=0 used as such, other missing.
 all sub-questions Q23a--Q23 taken to the EuLaViBar by their original scores

Scoring: $Q23=Q23a+Q23b+Q23c+Q23d$

Q24 Indicate how often you use language X in the following contexts. If the question doesn't apply to you at all (if you don't use any language in that context: for instance, you never have any contacts with your relatives in any language, or you never attend church services in any language), select the last option ("The question doesn't apply to me").

	Regularly	sometimes	never	The question doesn't apply to me
Home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I live alone</i>
Relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I don't have any contacts with my relatives</i>
Work / School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I don't work or study outside home</i>
Friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I don't have any friends</i>
Neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I don't have any contacts with my neighbours</i>
Shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Street	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Library	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I never go to a library</i>
Church	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <i>I never go to church</i>
Public authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community events*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other domain, if relevant**	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*By "community events" we refer to events in your local community, such as club evenings or cultural festivals in your village/town/suburb.

** You can add occasions of your own choice.

Recoding: If "Regularly"=4, "Sometimes" = 2, "Never"=0, other missing all sub-questions of language X taken separately

Scoring: $Q24 = (Q24a + \dots + Q24l)/12$

Q25 When you were a child, did your parents encourage you to use language X?

- No. Yes.

Recoding: code for "Yes"=4, "No" = 0, other missing

Q26 Do you try to make your children learn and use language X?

- I don't have children.
- I do not try to make my children learn and use X.
- I try (I have tried) to make my children learn and use X. Specify how (you can select more than one option):
 - I try to talk to them in X as much as possible.
 - I request or encourage them to talk to me in X.
 - I play with them in X or read books to them in X.
 - I try to give them X-language books to read, videos to watch, games to play etc.
 - I try to organise X-language activities for them or take them to the company of X-speakers.
 - I encourage them to study language X e.g. at school or on a language course.
 - Some other way, please specify:

Recoding: code for "I try" = 4, "I do not try" = 0, other missing

Q27 It is usual that people of a certain age or sex prefer using a certain language rather than another. Indicate how much you agree with the following statements:

	I totally agree	I agree	Difficult to say	I don't quite agree	I don't agree at all
Most people think that young boys should use language X	<input type="checkbox"/>				
Most people think that young girls should use language X	<input type="checkbox"/>				
Most people think that adult men should use language X	<input type="checkbox"/>				
Most people think that adult women should use language X	<input type="checkbox"/>				

Recoding: codes for "I totally agree"=4,..., "I don't agree at all"=0, other missing.

Scoring: $Q27 = (Q27a + \dots + Q27d)/4$

Recoding: codes for “No”=0, “Partly”=2, “Yes”=4, other missing

Q31 Do you think that the legislation in your country prevents the use of language X?

- No Yes Partly Don't know

Recoding: codes for “Yes” = 0, “Partly” = 2, “No” = 4, other missing

Q32 Are the laws concerning languages and their use available in language X?

- No Yes Partly Don't know

Recoding: codes for “No”=0, “Partly”=2, “Yes”=4, other missing

Q33 Is there any legislation about the use of language X in schools?

- No Yes Partly Don't know

Recoding: codes for “No”=0, “Partly”=2, “Yes”=4, other missing

Q34 What is your opinion on the role of language X in the labour market? Indicate how much you agree with the following statements:

	I totally agree	I agree	Difficult to say	I don't quite agree	I don't agree at all
Competence in language X facilitates finding a job	<input type="checkbox"/>				
Competence in language X facilitates getting a higher salary	<input type="checkbox"/>				
Competence in language X facilitates advancing in your career	<input type="checkbox"/>				
Competence in language X facilitates changing into a new job	<input type="checkbox"/>				

Recoding: codes for “I totally agree”=4,..., “I don't agree at all”=0, other missing.

Scoring: $Q34 = (Q34a + \dots + Q34d)/4$

Q35 Do you know of institutions or people who cultivate (develop, promote and regulate) language X in your country?

- No Yes

Recoding: codes for "No"=0, "Yes"=4, other missing.

Q36 Do you have the feeling that using language X in many situations of life is more difficult than using language Y?

- No Yes, often Sometimes

Recoding: codes for "Yes, often" = 4, "Sometimes" = 2, "No" = 0, other missing.

Q37 Do you think that language X should be developed (for instance: new words, better spelling or writing, clearer rules...) so that it could better be used in all kinds of situations?

- No Yes, often Difficult to say

Recoding: codes for "No"=0, "Yes"=4, other missing.

Q38 Are attempts being made to save language X in these days?

- Don't know No Yes

Recoding: codes for "No"=0, "Yes"=4, other missing.

Q39 Is language X used in the following domains (in your country/region)?

	yes	No	Don't know
Parliament	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Police office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tax office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health insurance office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employment office	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospitals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Courts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ministries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regional and municipal offices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Printed media (newspapers etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advertisements in public spaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advertisements (commercials) in media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Recoding: codes for “No”=0, “Yes”=4, other missing.

Scoring: $Q39 = (Q39a + \dots + Q39o) / 15$

Q40 Please answer the following questions about your media use by ticking the appropriate boxes. If your answer is “yes”, select also one of the options “regularly”, “sometimes”, or “never”.

a. Are newspapers available to you in language X?

- No
- Don't know

Yes, I know of the following: _____

and I read newspapers in language X regularly sometimes never

b. Are books available to you in language X?

- No
- Don't know
- Yes, and I read books in language X regularly sometimes never

c. Are there theatre performances or concerts in language X in your home region?

- No
- Don't know
- Yes, and I attend them regularly sometimes never

d. Are regular radio broadcasts in language X available to you?

- No
- Don't know

Yes, I know of the following: _____

and I listen to radio programmes in language X regularly sometimes never

e. Are regular TV broadcasts in language X available to you?

- No
- Don't know

Yes, I know of the following: _____

and I watch to TV programmes in language X regularly sometimes never

f. Are music CDs in language X available to you?

- No
- Don't know
- Yes, and I listen to CDs in X regularly sometimes never

g. Are films in language X available to you (on DVD, on TV, in the cinema)?

- No
- Don't know
- Yes, and I watch films in X regularly sometimes never

h. Are Internet contents (webpages, newspapers, blogs etc.) in language X available to you?

- No
- Don't know
- Yes, and I read X-language webpages regularly sometimes never

i. Is computer software in language X available to you?

- No
- Don't know
- Yes, and I use X-language software regularly sometimes never

j. Do you write e-mails?

- No
- Yes, and I write e-mails in language X regularly sometimes never

k. Do you write text messages (SMS)?

- No
- Yes, and I write text messages in language X regularly sometimes never

l. Do you use social media (Facebook, Twitter, chatrooms, Internet discussion boards, etc.)?

- No
- Yes, and I use language X in social media regularly sometimes never

m. Do you play interactive Internet games?

- No
- Yes, and I use language X in playing regularly sometimes never

Recoding: recode sub-questions differently for Focus Areas as follows:

Capacity: If the answer is "Yes" with "Regularly" or "Sometimes" then the value = 4, else if the answer is "Yes" with "Never" then the value = 0, otherwise missing

Scoring: $Q40_a=(Q40a_1+\dots+Q40a_13)/13$

Opportunity and Language products:

Answer "Yes" = 4, "No" = 0, other missing

Scoring: $Q40_b=(Q40b_1+\dots+Q40b_13)/13$

Desire: If the answer is "Yes" with "Regularly" then the value = 4, else if the answer is "Yes" with "Sometimes" then the value = 2, else if the answer is "Yes" with "Never" then the value = 0, otherwise missing

Scoring: $Q40_c=(Q40c_1+\dots+Q40c_13)/13$

Q41 Active use of language X (text production) and cultural products

a. Do you write letters (in any language)?

- No
- Yes, and I write letters in language X regularly sometimes never

b. Do you write a diary or make notes (in any language)?

- No
- Yes, and I write them in language X regularly sometimes never

c. Do you write blogs (in any language)?

- No
- Yes, and I write them in language X regularly sometimes never

d. Do you write literary texts (for instance, stories or poetry) or compose songs of your own (in any language)?

- No
- Yes, and I write my texts or songs in X regularly sometimes never

e. Do you sing songs (in any language)?

- No
- Yes, and I sing in language X regularly sometimes never

f. Do you ever recite poetry or play in theatre performances (for instance, in an amateur theatre group) in any language?

- No
- Yes, and I recite poetry or perform in X regularly sometimes never

Recoding: recode sub-questions differently for Focus Areas as follows:

Capacity: If the answer is "Yes" with "Regularly" or "Sometimes" then the value = 4,
else if the answer is "Yes" with "Never" then the value = 0,
otherwise missing

Scoring: $Q41a=(Q41a_1+\dots+Q41a_6)/6$

Desire: If the answer is "Yes" with "Regularly" then the value = 4,
If the answer is "Yes" with "Sometimes" then the value = 2,
else if the answer is "Yes" with "Never" then the value = 0,
otherwise missing

Scoring: $Q41b=(Q41b_1+\dots+Q41b_6)/6$

3 EuLaViBar Focus Areas and Dimensions

The questions above were combined into four focus areas and in each focus area into three or four dimensions:

Capacity:	Q06, Q08-Q18, Q23-Q26, Q32, Q36, Q40b, Q41a
Language use:	Q06, Q08-Q18, Q23-Q26, Q36
Legislation:	Q32
Media:	Q40b, Q41a
Opportunity:	Q07, Q19-Q22, Q30-Q33, Q35-Q39, Q40a
Language use:	Q19, Q20, Q35-Q39
Education:	Q07, Q21, Q22
Legislation:	Q30-Q33
Media:	Q40a
Desire:	Q06, Q08-Q20, Q23-Q31, Q34, Q36-Q39, Q40c, Q41b
Language use:	Q06, Q08-Q20, Q23-Q29, Q34, Q36-Q39
Legislation:	Q30, Q31
Media:	Q40c, Q41b
Language Products:	Q21, Q22, Q29, Q32, Q39, Q40a
Language use:	Q29, Q39
Education:	Q21, Q22
Legislation:	Q32
Media:	Q40a

Additionally, the score should be calculated by age groups for the Cross-generational language transmission.

Age grouping must be decided according to the needs of the study in question. For example, in ELDIA minority language survey the classification was 18-29, 30-49, 50-64 and 65 years or more.

Questions to be included are Q07-Q18. One must also take the number of respondents into account to obtain enough observations for valid calculation. As a rule of thumb the number of respondents should be 30 or more in each age category. The differences can be analyzed in various ways. Statistical modelling provides many alternative methods, e.g. generalized regression models with least square means, or comparison of mean scores by analysis of variance.

4 An example on how to calculate the scores

Number of respondents 356, focus area: Language products

Focus area: Language Products

Variable	Label	Number of variables (p)	Number of observations (N)	Mean	Sum = N*mean
Q21	X as teaching language	1	356	0,064607	23
Q22	Average score of Q22 items (language X)	1	356	0,029963	10,67
Q29	Average score of Q29 over all items	1	356	1,897673	675,57
Q32	Is such legislation available in language X	1	173	0,138728	24
Q39	Average score of all items of question 39	1	286	1,418706	405,75
Q40a	Average score of all items of question 40	1	318	0,412736	131,25
Sum		6	356		1270,24
Mean (= Sum of score / (N*p))					0,59

Dimension: Language use

Q29	Average score of Q29 over all items	1	356	1,897673	675,57
Q39	Average score of all items of question 39	1	286	1,418706	405,75
Sum		2	356		1081,32
Mean (= Sum of score / (N*p))					1,52

Dimension: Education

Q21	X as teaching language	1	356	0,064607	23
Q22	Average score of Q22 items (language X)	1	356	0,029963	10,67
Sum		2	356		33,67
Mean (= Sum of score / (N*p))					0,05

Dimension: Legislation

Q32	Is such legislation available in language X	1	173	0,138728	24
Mean					0,14

Dimension: Media

Q40a	Average score of all items of question 62A	1	318	0,412736	131,25
Mean					0,41