[MCSQ]: The Multilingual Corpus of Survey Questionnaires

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RECSM Research and Expertise Centre for Survey Methodology

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Outline

- General information and structure
- Alignment and Annotation
- Applications
- Design
- Access and Examples
- Limitations
- Next steps
- Conclusions

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The Multilingual Corpus of Survey Questionnaires

- The Multilingual Corpus of Survey Questionnaires (MCSQ) is the first publicly available **corpus** of survey questionnaires
  - **Corpus** = large and structured language resource (text, audio). In this context, **survey items texts**

- Version 2 (Mileva Marić-Einstein): 263 distinct questionnaires from the ESS, EVS, and SHARE
  - More than 3.5 million words
  - ≅ 657.000 sentences

- English source and their translations into Catalan, Czech, French, German, Norwegian, Portuguese, Spanish and Russian, adding to 29 language varieties (e.g. French-Switzerland)

- Nearly 80% of the corpus is aligned
  - Source sentences (in English) are linked to their translations

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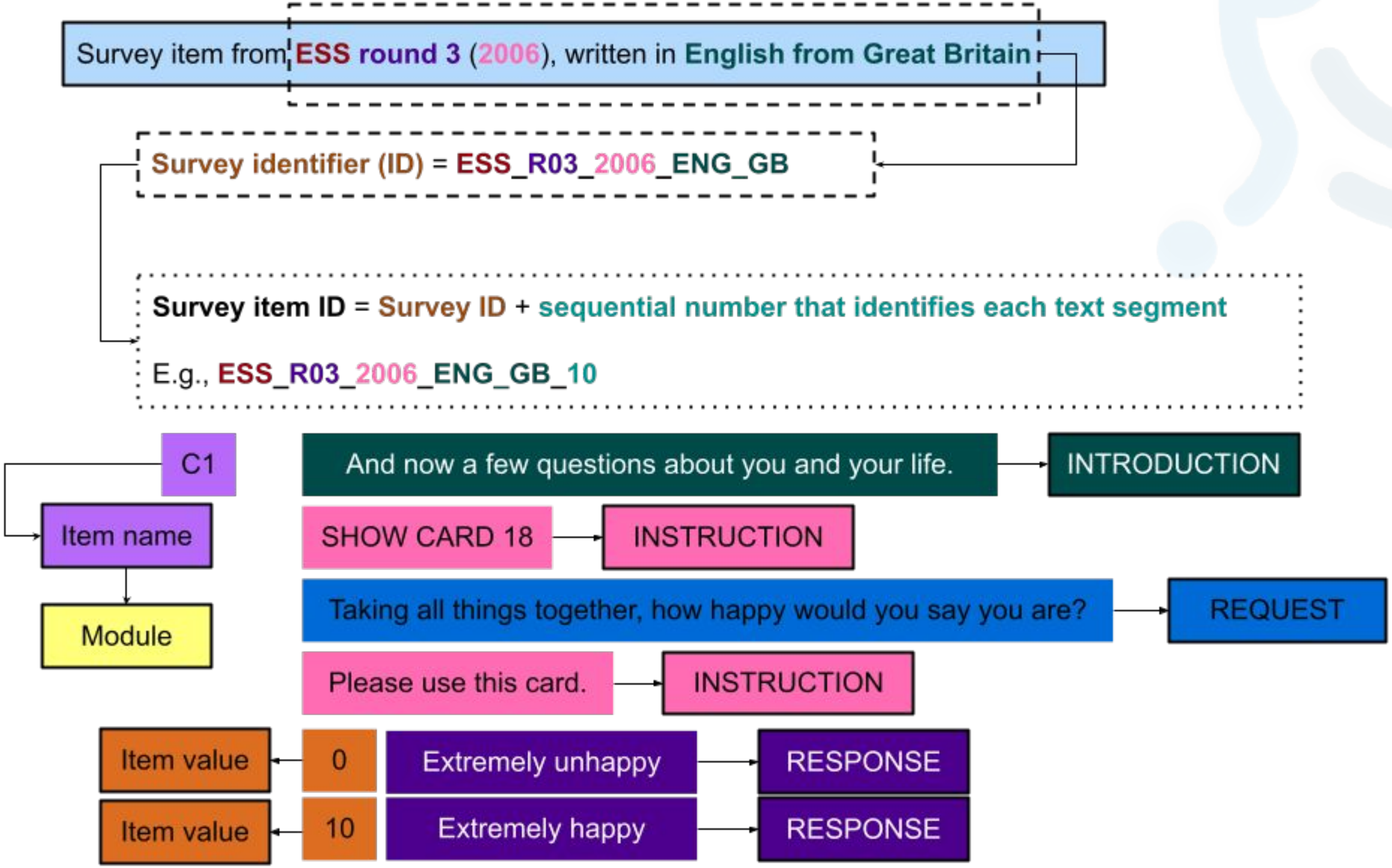
And what is in there?



Survey item from ESS round 3 (2006), written in English from Great Britain

Survey identifier (ID) = ESS_R03_2006_ENG_GB

Survey item ID = Survey ID + sequential number that identifies each text segment

E.g., ESS_R03_2006_ENG_GB_10

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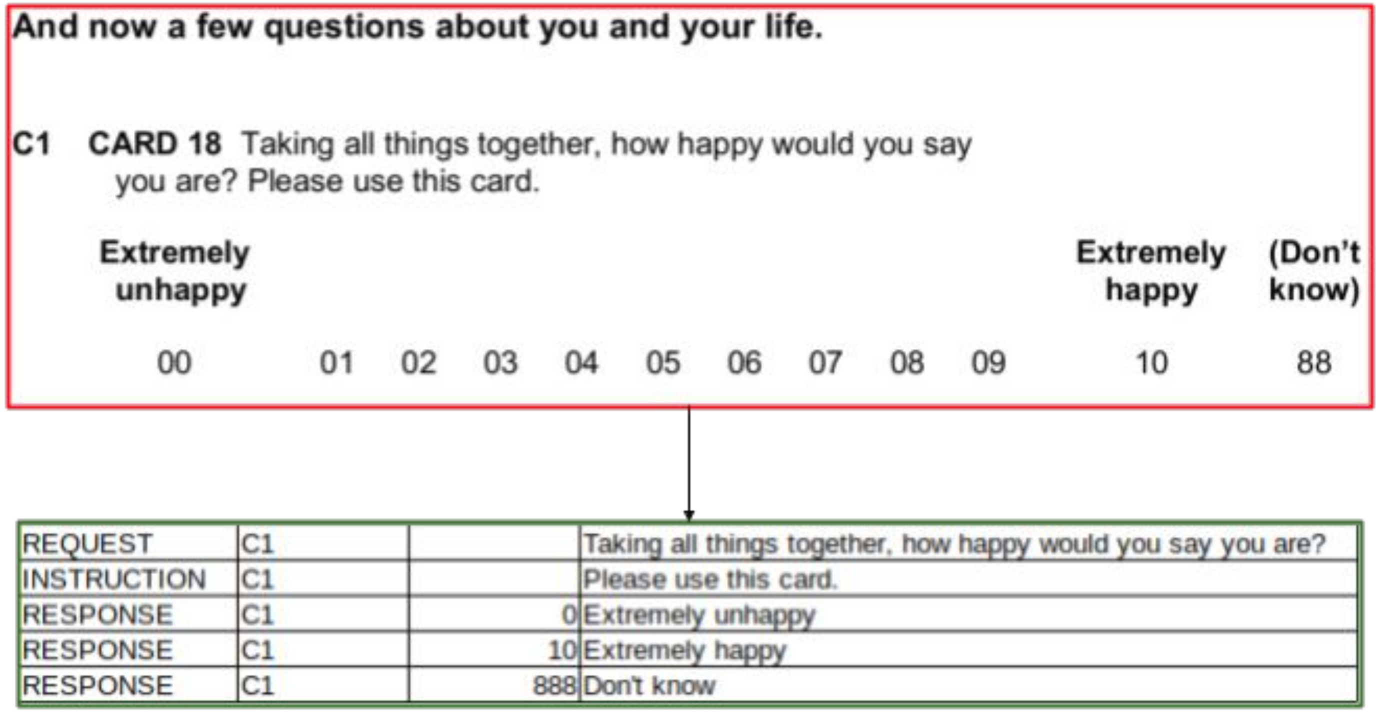
And how is it different from a PDF?



And now a few questions about you and your life.

C1 CARD 18 Taking all things together, how happy would you say you are? Please use this card.

Extremely unhappy										**Extremely happy**	**(Don't know)**
00	01	02	03	04	05	06	07	08	09	10	88

REQUEST	C1		Taking all things together, how happy would you say you are?
INSTRUCTION	C1		Please use this card.
RESPONSE	C1	0	Extremely unhappy
RESPONSE	C1	10	Extremely happy
RESPONSE	C1	888	Don't know

Features	**PDF file**	**MCSQ survey item**
Machine readable?	**No**	**Yes**
Sentence segmented?	**No**	**Yes**
Item type indication?	**No**	**Yes**
Country, language, year, etc metadata?	**No**	**Yes**
Comparison	**Only manual**	**Fully automatized**

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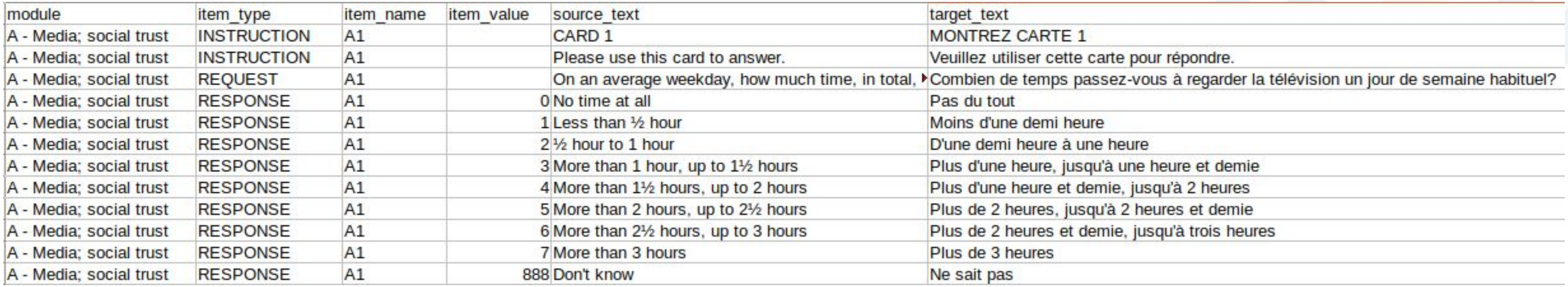
So there is the questionnaire text, what else?



module	item_type	item_name	item_value	source_text	target_text
A - Media; social trust	INSTRUCTION	A1		CARD 1	MONTREZ CARTE 1
A - Media; social trust	INSTRUCTION	A1		Please use this card to answer.	Veuillez utiliser cette carte pour répondre.
A - Media; social trust	REQUEST	A1		On an average weekday, how much time, in total,	Combien de temps passez-vous à regarder la télévision un jour de semaine habituel?
A - Media; social trust	RESPONSE	A1	0	No time at all	Pas du tout
A - Media; social trust	RESPONSE	A1	1	Less than ½ hour	Moins d'une demi heure
A - Media; social trust	RESPONSE	A1	2	½ hour to 1 hour	D'une demi heure à une heure
A - Media; social trust	RESPONSE	A1	3	More than 1 hour, up to 1½ hours	Plus d'une heure, jusqu'à une heure et demie
A - Media; social trust	RESPONSE	A1	4	More than 1½ hours, up to 2 hours	Plus d'une heure et demie, jusqu'à 2 heures
A - Media; social trust	RESPONSE	A1	5	More than 2 hours, up to 2½ hours	Plus de 2 heures, jusqu'à 2 heures et demie
A - Media; social trust	RESPONSE	A1	6	More than 2½ hours, up to 3 hours	Plus de 2 heures et demie, jusqu'à trois heures
A - Media; social trust	RESPONSE	A1	7	More than 3 hours	Plus de 3 heures
A - Media; social trust	RESPONSE	A1	888	Don't know	Ne sait pas

- Sentence alignment: finding the correspondence between a given sentence in a source language and its translation in a target language

- Country specific responses (about religion, education level, etc) excluded from alignments by design

- Approximately 80% of the corpus is aligned (concerning a total of ≅ 657.000 sentences)

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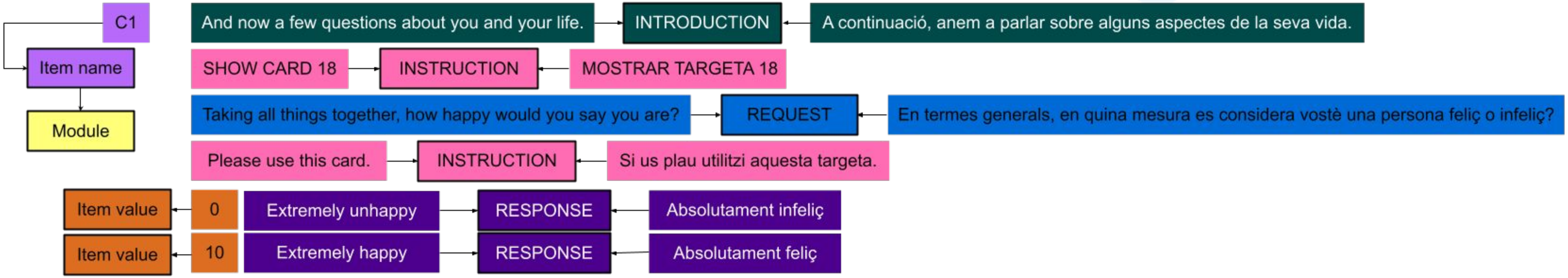
Visualizing the alignment



C1

Item name

Module

And now a few questions about you and your life. → INTRODUCTION ← A continuació, anem a parlar sobre alguns aspectes de la seva vida.

SHOW CARD 18 → INSTRUCTION ← MOSTRAR TARGETA 18

Taking all things together, how happy would you say you are? → REQUEST ← En termes generals, en quina mesura es considera vostè una persona feliç o infeliç?

Please use this card. → INSTRUCTION ← Si us plau utilitzi aquesta targeta.

Item value ← 0 Extremely unhappy → RESPONSE ← Absolutament infeliç

Item value ← 10 Extremely happy → RESPONSE ← Absolutament feliç

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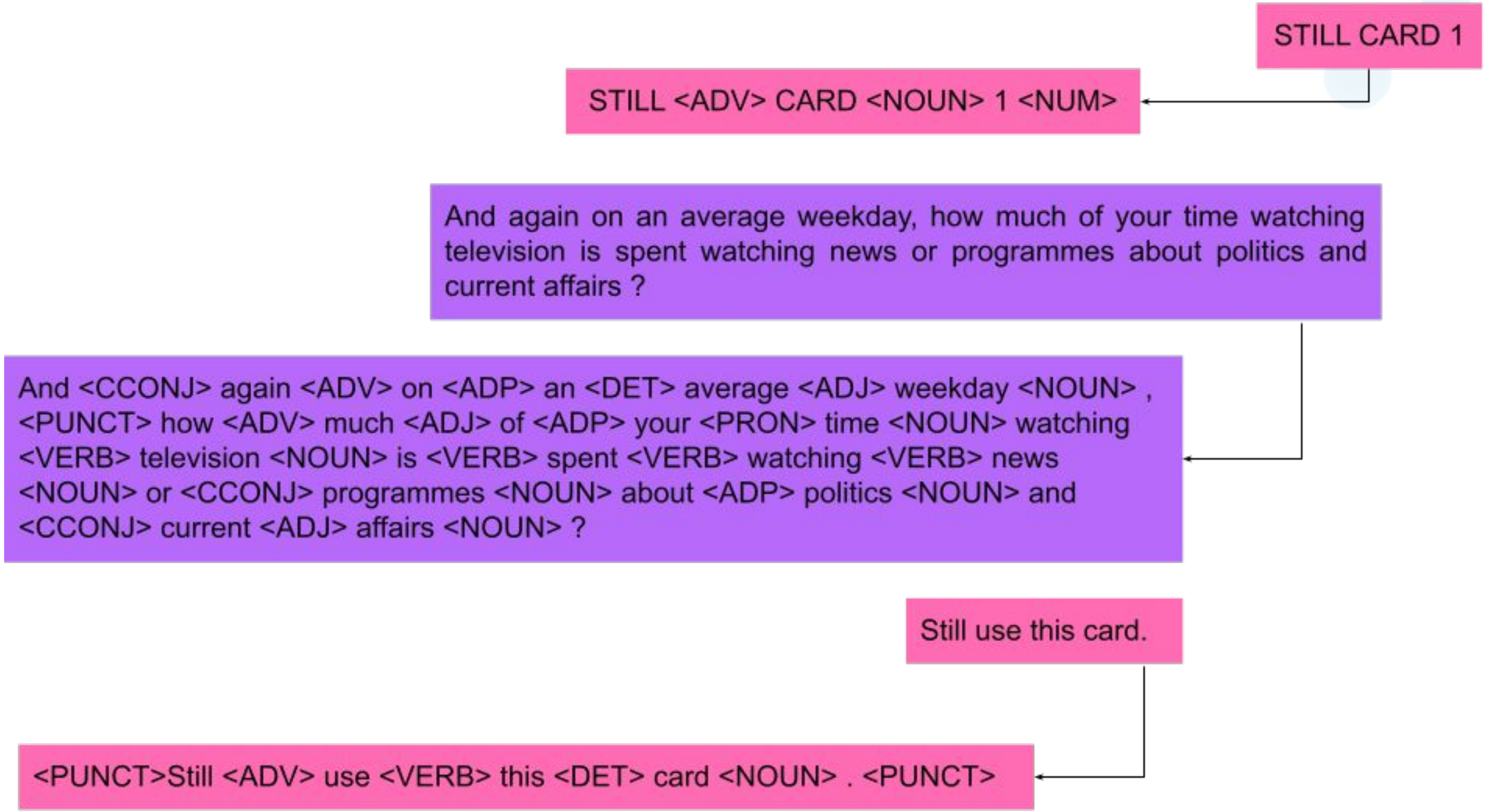
Annotation

- Part-of-speech tags
  - Universal Dependencies tagset



STILL CARD 1

STILL <ADV> CARD <NOUN> 1 <NUM>

And again on an average weekday, how much of your time watching television is spent watching news or programmes about politics and current affairs ?

And <CCONJ> again <ADV> on <ADP> an <DET> average <ADJ> weekday <NOUN> , <PUNCT> how <ADV> much <ADJ> of <ADP> your <PRON> time <NOUN> watching <VERB> television <NOUN> is <VERB> spent <VERB> watching <VERB> news <NOUN> or <CCONJ> programmes <NOUN> about <ADP> politics <NOUN> and <CCONJ> current <ADJ> affairs <NOUN> ?

Still use this card.

<PUNCT>Still <ADV> use <VERB> this <DET> card <NOUN> . <PUNCT>

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What could I do with MCSQ?

- Analyzing translations
- Translation memory
- Data to feed translation engines (machine translation)
- Bilingual dictionaries of survey terms
- Analyzing linguistic patterns of survey items
- (easily) Retrieving past question wordings to use as reference
- (easily) Comparing survey items

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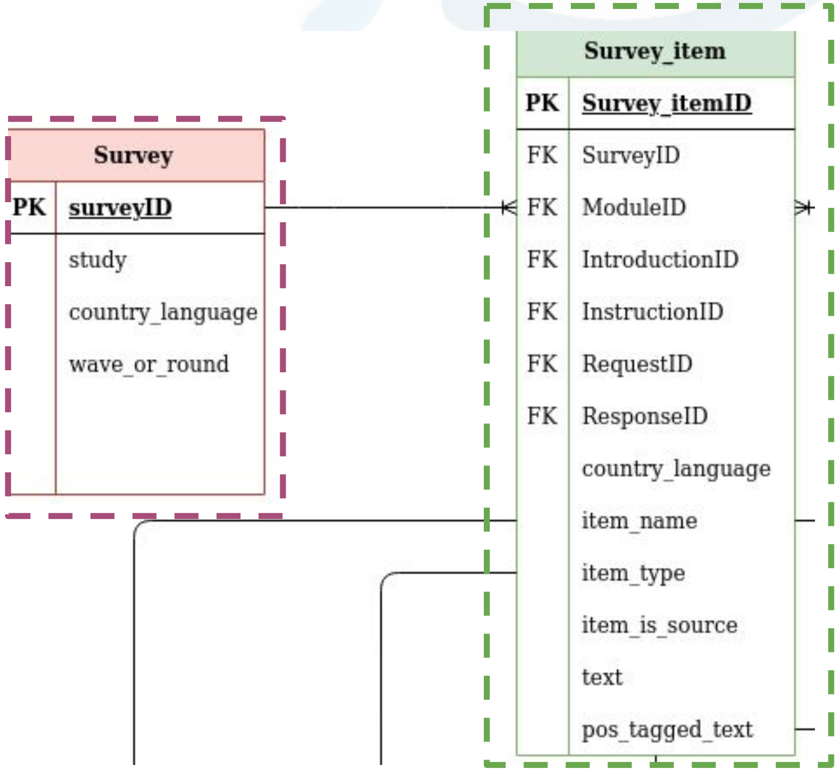
MCSQ design

Think about spreadsheets

- It is a **Entity Relationship** database
  - A representation of data as **tables (entities)** that have attributes (metadata) and **relationships** with other **tables (entities)**

- A **survey** is an **entity** that has a **relationship** with one or more **survey items**
  - A survey is composed by one or more survey items



	Survey
PK	surveyID
	study
	country_language
	wave_or_round

	Survey_item
PK	Survey_itemID
FK	SurveyID
FK	ModuleID
FK	IntroductionID
FK	InstructionID
FK	RequestID
FK	ResponseID
	country_language
	item_name
	item_type
	item_is_source
	text
	pos_tagged_text

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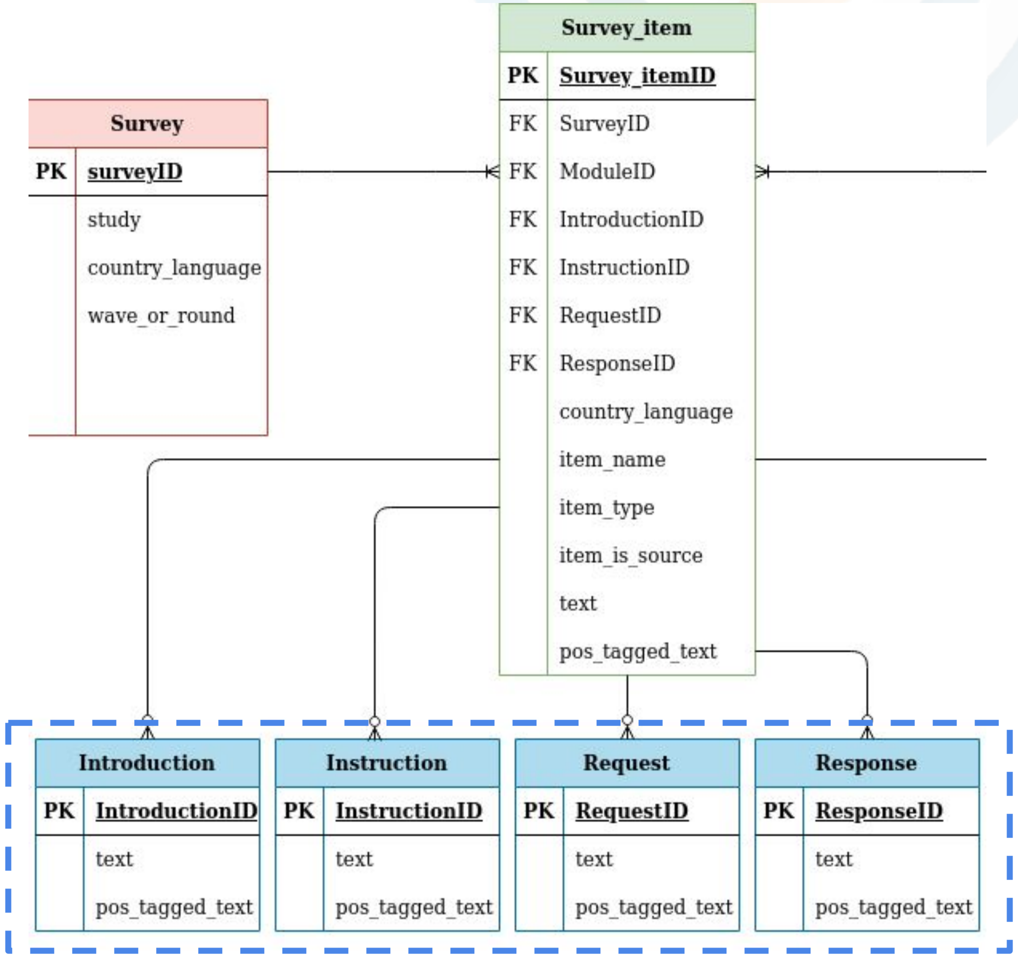
MCSQ design

- In its turn, a **survey item** has a relationship with one or more **introduction, instruction, request and response** entities
  - a **survey item** can be decomposed into **introduction, instruction, request and response**



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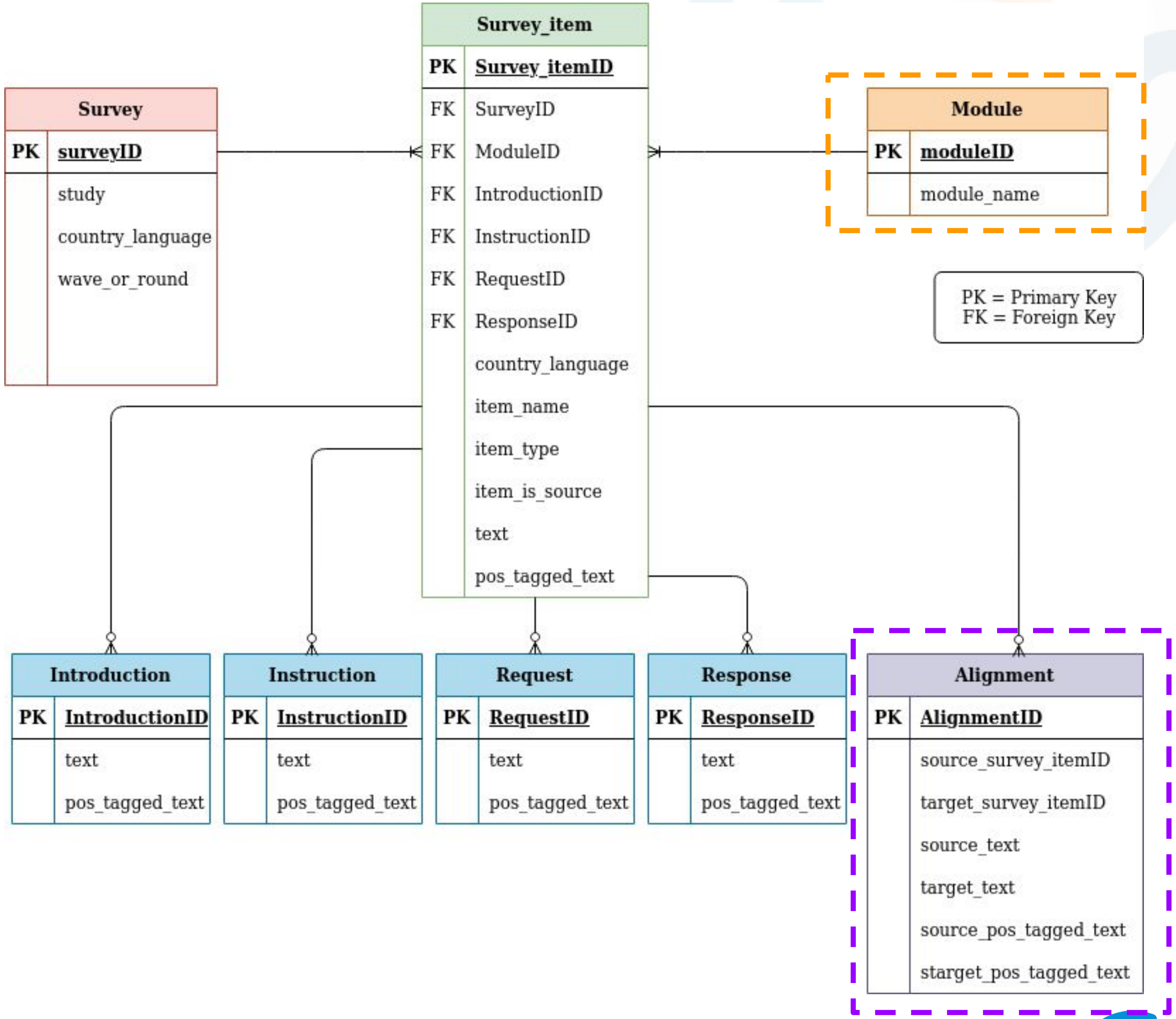
Complete ER diagram

- Additional tables to store module and alignment information



	Survey
PK	surveyID
	study
	country_language
	wave_or_round

	Survey_item
PK	Survey_itemID
FK	SurveyID
FK	ModuleID
FK	IntroductionID
FK	InstructionID
FK	RequestID
FK	ResponseID
	country_language
	item_name
	item_type
	item_is_source
	text
	pos_tagged_text

	Module
PK	moduleID
	module_name

PK = Primary Key
FK = Foreign Key

	Introduction
PK	IntroductionID
	text
	pos_tagged_text

	Instruction
PK	InstructionID
	text
	pos_tagged_text

	Request
PK	RequestID
	text
	pos_tagged_text

	Response
PK	ResponseID
	text
	pos_tagged_text

	Alignment
PK	AlignmentID
	source_survey_itemID
	target_survey_itemID
	source_text
	target_text
	source_pos_tagged_text
	starget_pos_tagged_text

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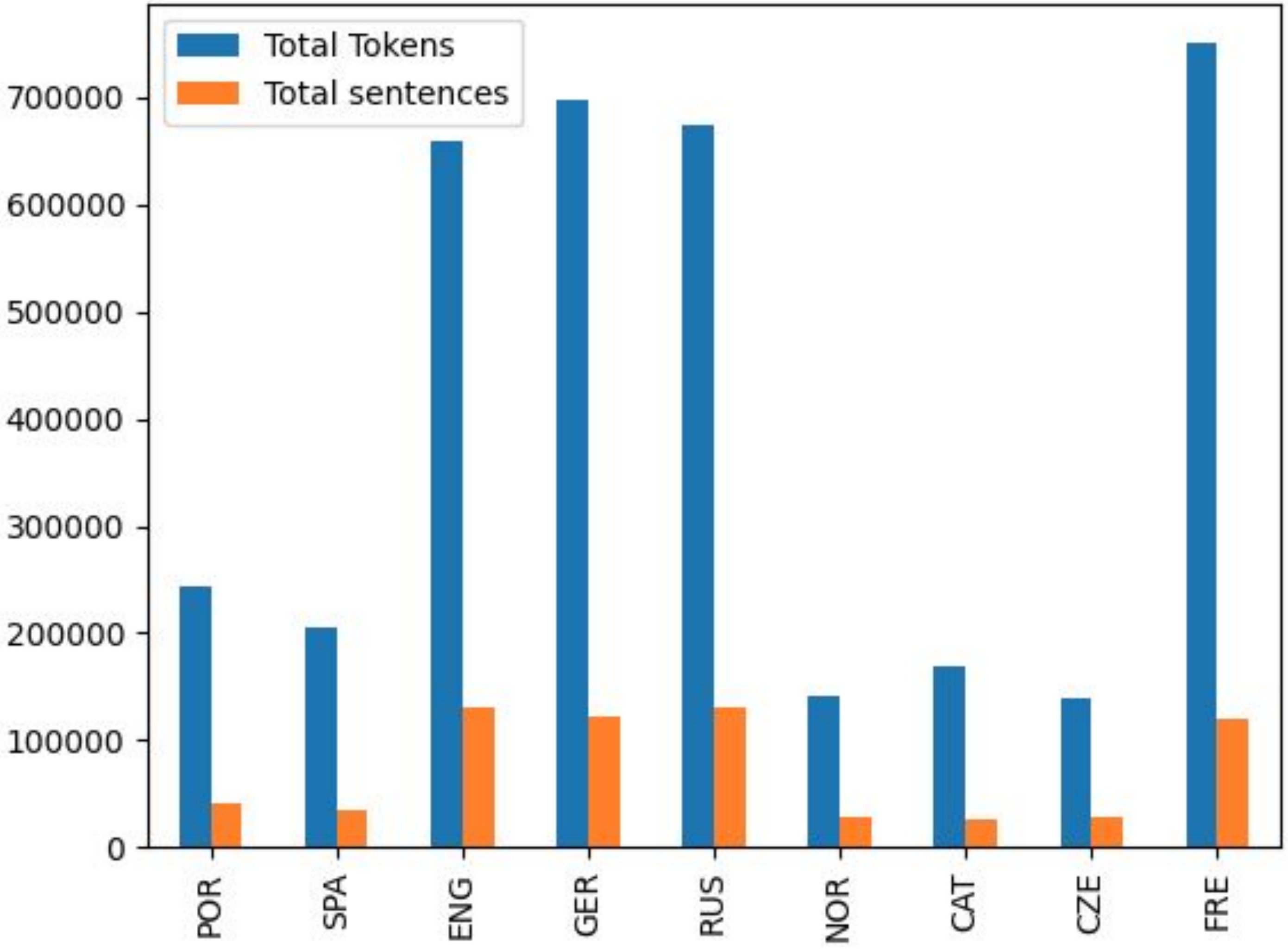
MCSQ in numbers: sentences and tokens

Think about words



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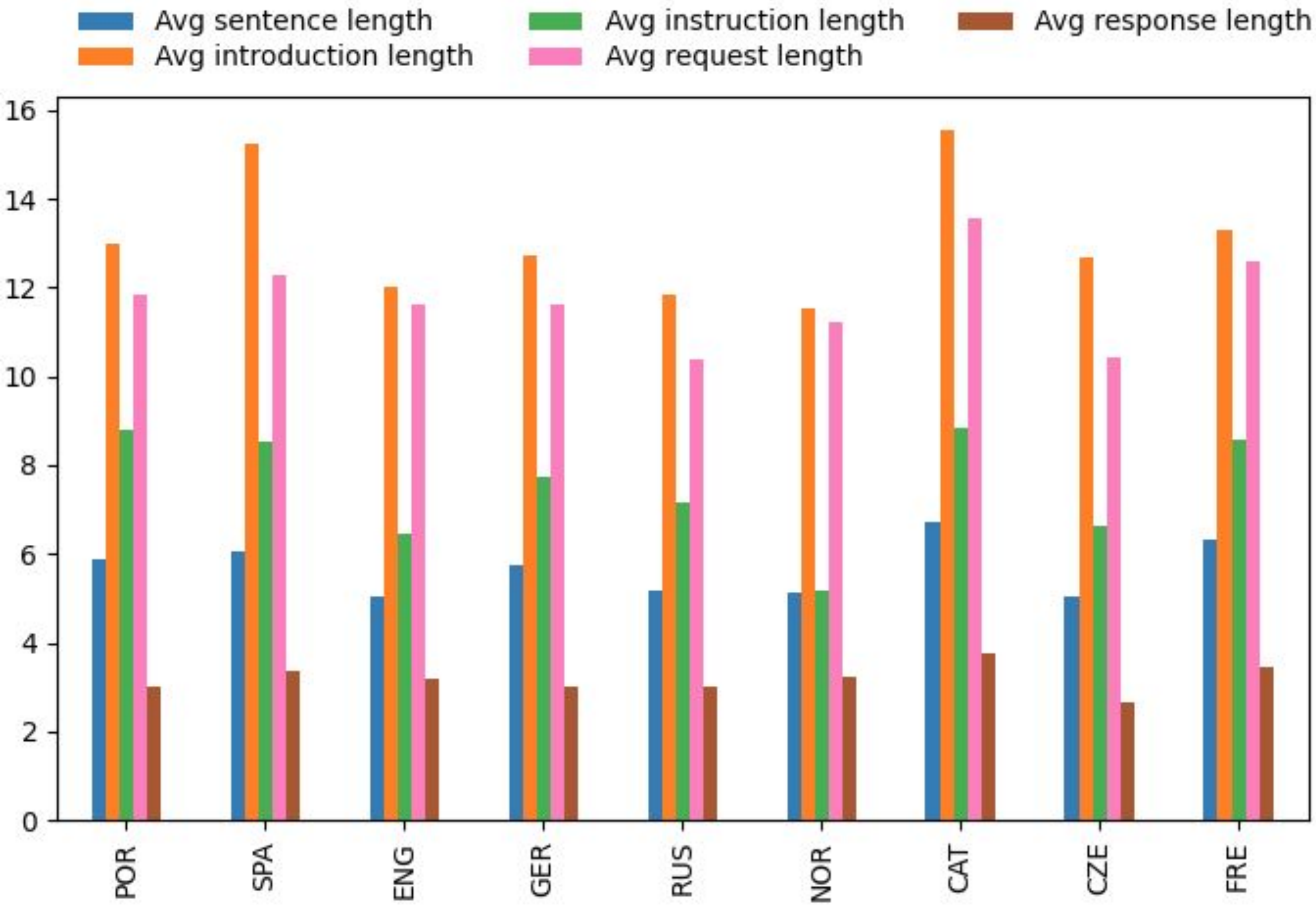
MCQ in numbers: average text segment length



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How to cite and relevant links

- Official website https://www.upf.edu/web/mcsq/

- Open source
  – Github repository containing developed code https://github.com/dsorato/MCSQ_compiling
  – Technical documentation in Read the Docs https://mcsq-compiling.readthedocs.io/en/latest/

- META paper

Zavala-Rojas, D., Sorato, D., Hareide, L., & Hofland, K. (forthcoming 2021). [MCSQ] Multilingual Corpus of Survey Questionnaires. Meta: Journal Des Traducteurs. @article{Zavala-Rojas,author = {Zavala-Rojas, Diana and Sorato, Danielly and Hareide, Lidun and Hofland, Knut},journal = {Meta: Journal des traducteurs},title = {{[MCSQ] Multilingual Corpus of Survey Questionnaires}}}

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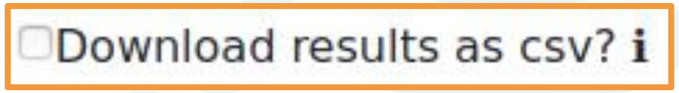
Accessing the data

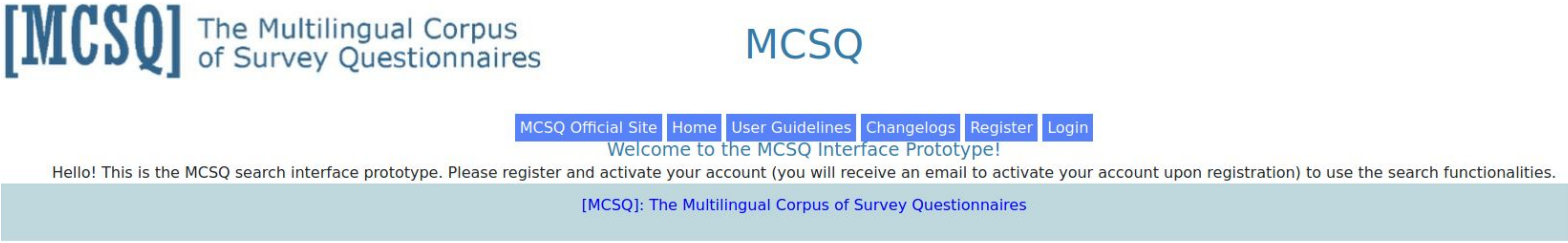
- Preferably using the search interface (prototype stage) in http://easy.mcsq.upf.edu/
  - Free registration
  - Register and activate account to use functionalities



☐Download results as csv? ℹ

- Through email contact danielly.sorato@upf.edu

- Futurely in CLARIN repository



[MCSQ] The Multilingual Corpus of Survey Questionnaires

MCSQ

Welcome to the MCSQ Interface Prototype!

Hello! This is the MCSQ search interface prototype. Please register and activate your account (you will receive an email to activate your account upon registration) to use the search functionalities.

[MCSQ]: The Multilingual Corpus of Survey Questionnaires

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Interface main functionalities

- Word frequencies
  - to design language experiments, carry out research on lexical semantics, psycholinguistics, etc

- Collocations
  - provide information on word meaning and usage, following the idea that "you can know a word by the company it keeps".

- Word searches
  - To get alignment information or to filter texts

- Compare survey items (up to 8 language varieties, same study/year)
  - To easily retrieve/compare survey items
  - By item type, word occurrence and whole questionnaire
  - **Not aligned!! If you want to see alignments use the alignment table**

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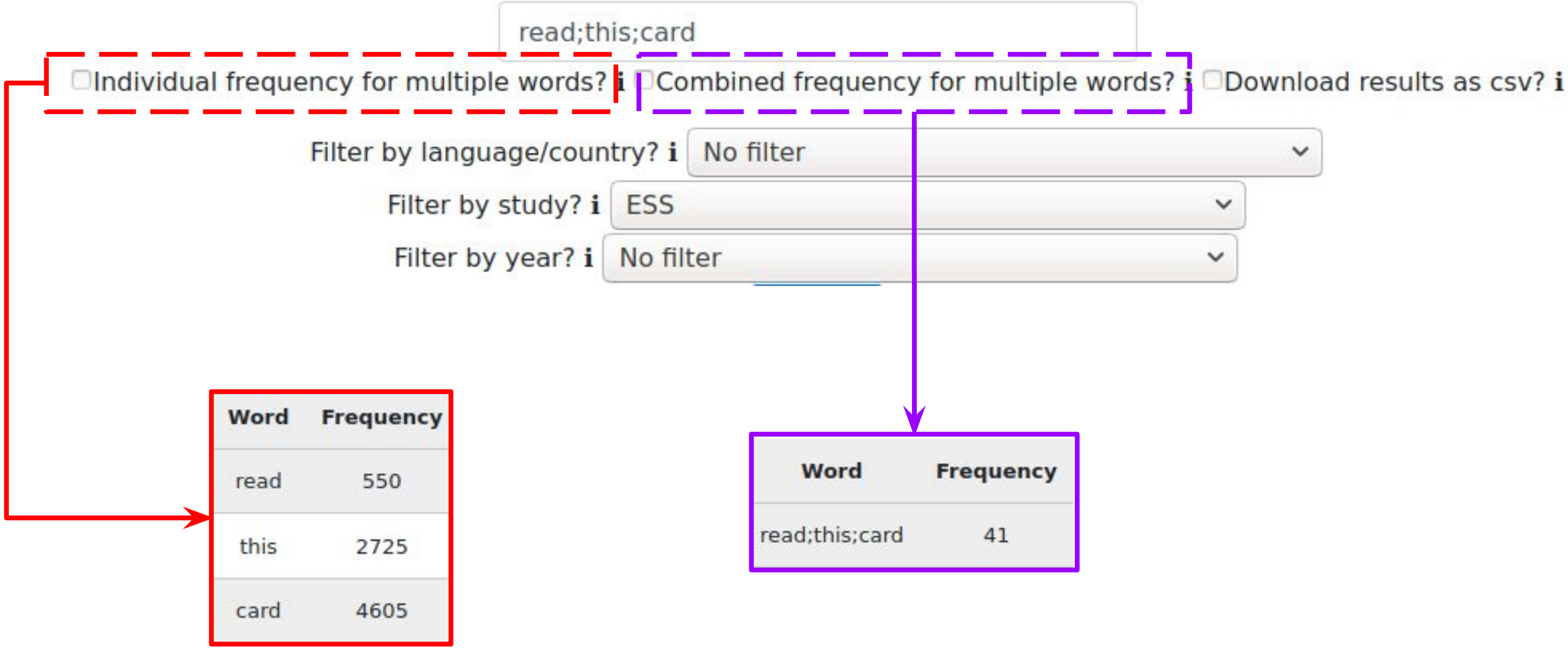
Word frequency

- Compute the frequency of the words ‘read’, ‘this’ and ‘card’ on ESS questionnaires



read;this;card

□ Individual frequency for multiple words? **i** □ Combined frequency for multiple words? **i** □ Download results as csv? **i**

Filter by language/country? **i** No filter

Filter by study? **i** ESS

Filter by year? **i** No filter

Word	Frequency
read	550
this	2725
card	4605

Word	Frequency
read;this;card	41

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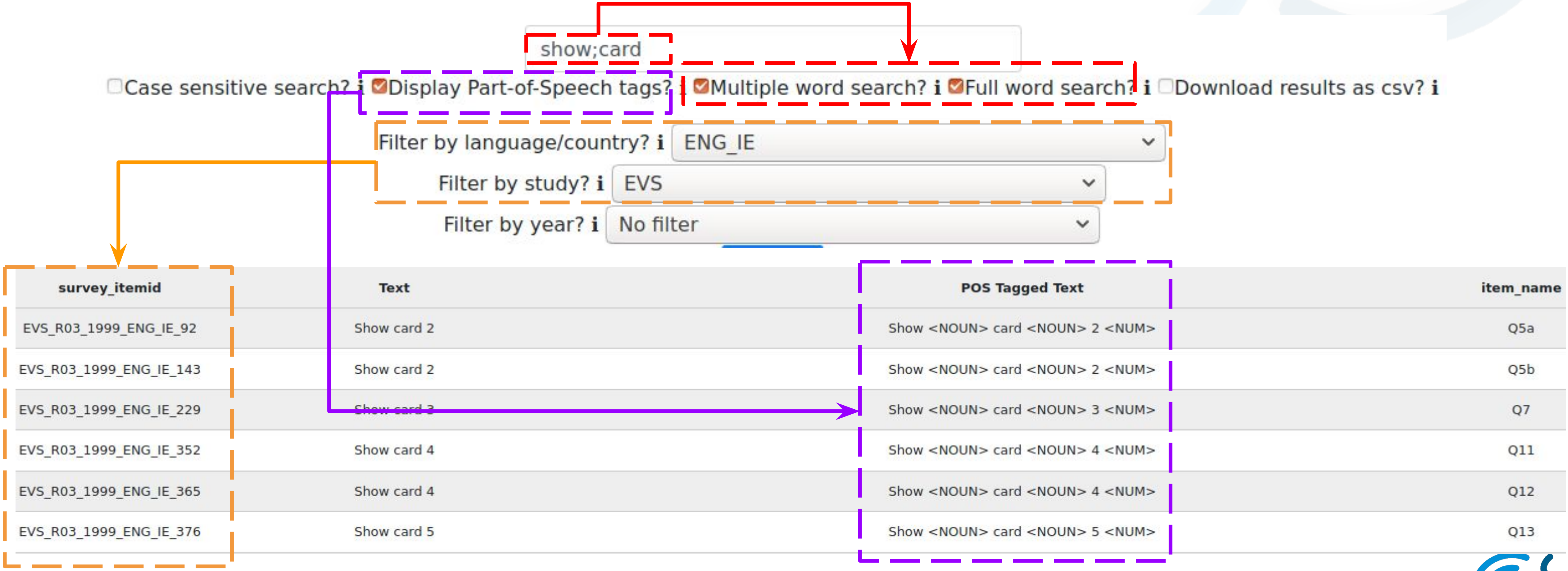
Word search example

- Locating all instruction segments in English from Ireland EVS questionnaires were the words “show card” appear



show;card

□Case sensitive search? i ☑Display Part-of-Speech tags? i ☑Multiple word search? i ☑Full word search? i □Download results as csv? i

Filter by language/country? i ENG_IE

Filter by study? i EVS

Filter by year? i No filter

survey_itemid	Text	POS Tagged Text	item_name
EVS_R03_1999_ENG_IE_92	Show card 2	Show <NOUN> card <NOUN> 2 <NUM>	Q5a
EVS_R03_1999_ENG_IE_143	Show card 2	Show <NOUN> card <NOUN> 2 <NUM>	Q5b
EVS_R03_1999_ENG_IE_229	Show card 3	Show <NOUN> card <NOUN> 3 <NUM>	Q7
EVS_R03_1999_ENG_IE_352	Show card 4	Show <NOUN> card <NOUN> 4 <NUM>	Q11
EVS_R03_1999_ENG_IE_365	Show card 4	Show <NOUN> card <NOUN> 4 <NUM>	Q12
EVS_R03_1999_ENG_IE_376	Show card 5	Show <NOUN> card <NOUN> 5 <NUM>	Q13

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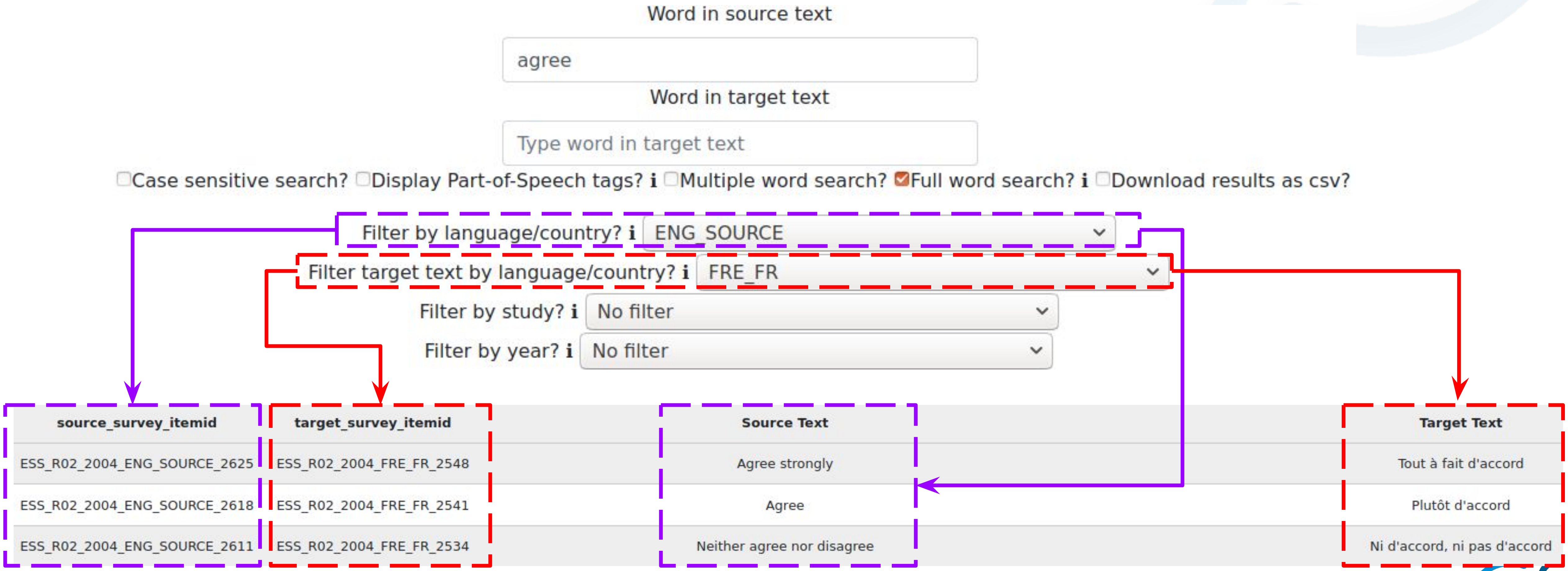
Alignment search example

- Searching how the word ‘agree’ was translated to French (from France) questionnaires across all survey projects



Word in source text

agree

Word in target text

Type word in target text

□Case sensitive search? □Display Part-of-Speech tags? i □Multiple word search? ☑Full word search? i □Download results as csv?

Filter by language/country? i ENG_SOURCE

Filter target text by language/country? i FRE_FR

Filter by study? i No filter

Filter by year? i No filter

source_survey_itemid	target_survey_itemid	Source Text	Target Text
ESS_R02_2004_ENG_SOURCE_2625	ESS_R02_2004_FRE_FR_2548	Agree strongly	Tout à fait d'accord
ESS_R02_2004_ENG_SOURCE_2618	ESS_R02_2004_FRE_FR_2541	Agree	Plutôt d'accord
ESS_R02_2004_ENG_SOURCE_2611	ESS_R02_2004_FRE_FR_2534	Neither agree nor disagree	Ni d'accord, ni pas d'accord

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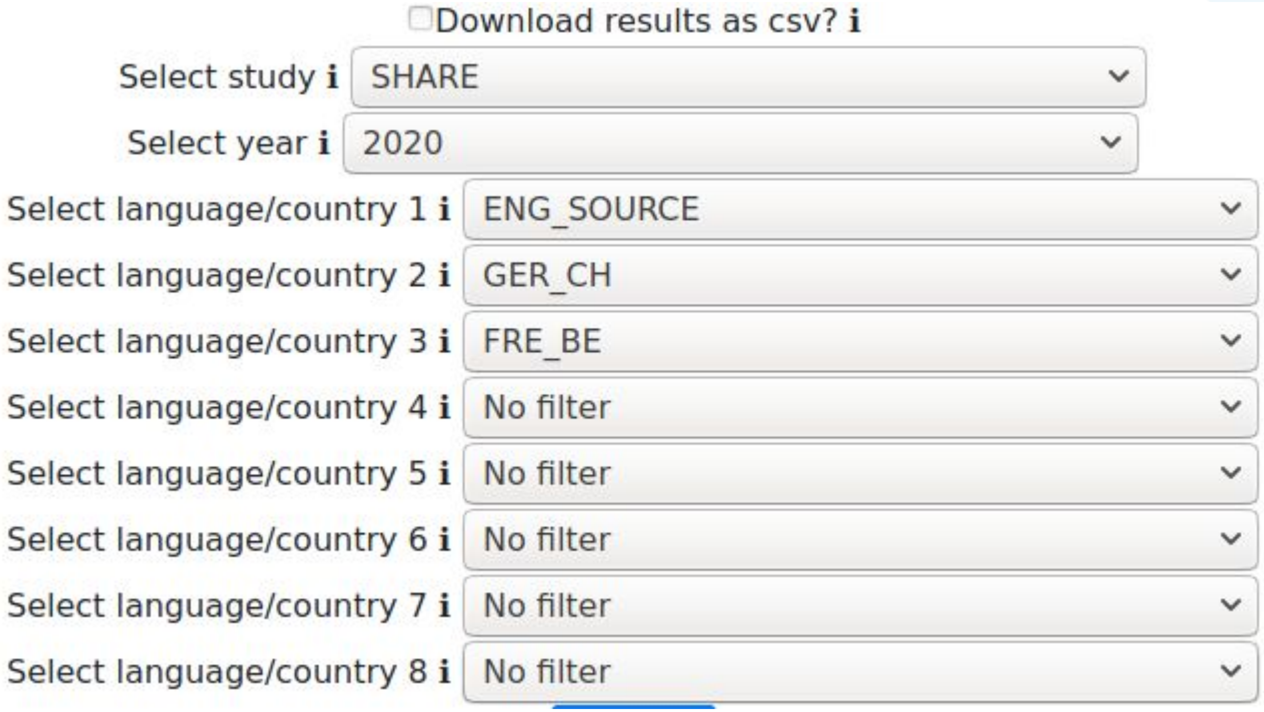
Compare survey items example

- Comparing the SHARE COVID questionnaires in English, German (Switzerland) and French (Belgium)



□ Download results as csv? i

Select study i	SHARE
Select year i	2020
Select language/country 1 i	ENG_SOURCE
Select language/country 2 i	GER_CH
Select language/country 3 i	FRE_BE
Select language/country 4 i	No filter
Select language/country 5 i	No filter
Select language/country 6 i	No filter
Select language/country 7 i	No filter
Select language/country 8 i	No filter

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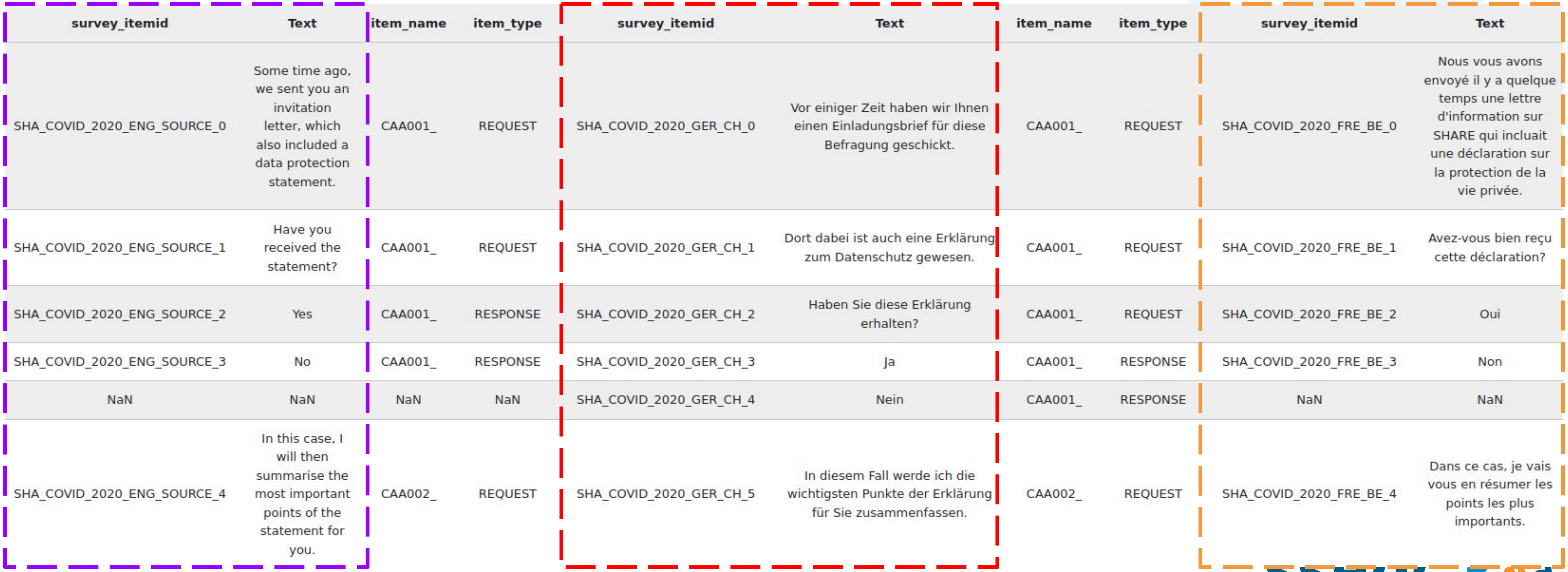
Compare survey items example

- Comparing the SHARE COVID questionnaires in English, German (Switzerland) and French (Belgium)



survey_itemid	Text	item_name	item_type	survey_itemid	Text	item_name	item_type	survey_itemid	Text
SHA_COVID_2020_ENG_SOURCE_0	Some time ago, we sent you an invitation letter, which also included a data protection statement.	CAA001_	REQUEST	SHA_COVID_2020_GER_CH_0	Vor einiger Zeit haben wir Ihnen einen Einladungsbrief für diese Befragung geschickt.	CAA001_	REQUEST	SHA_COVID_2020_FRE_BE_0	Nous vous avons envoyé il y a quelque temps une lettre d'information sur SHARE qui incluait une déclaration sur la protection de la vie privée.
SHA_COVID_2020_ENG_SOURCE_1	Have you received the statement?	CAA001_	REQUEST	SHA_COVID_2020_GER_CH_1	Dort dabei ist auch eine Erklärung zum Datenschutz gewesen.	CAA001_	REQUEST	SHA_COVID_2020_FRE_BE_1	Avez-vous bien reçu cette déclaration?
SHA_COVID_2020_ENG_SOURCE_2	Yes	CAA001_	RESPONSE	SHA_COVID_2020_GER_CH_2	Haben Sie diese Erklärung erhalten?	CAA001_	REQUEST	SHA_COVID_2020_FRE_BE_2	Oui
SHA_COVID_2020_ENG_SOURCE_3	No	CAA001_	RESPONSE	SHA_COVID_2020_GER_CH_3	Ja	CAA001_	RESPONSE	SHA_COVID_2020_FRE_BE_3	Non
NaN	NaN	NaN	NaN	SHA_COVID_2020_GER_CH_4	Nein	CAA001_	RESPONSE	NaN	NaN
SHA_COVID_2020_ENG_SOURCE_4	In this case, I will then summarise the most important points of the statement for you.	CAA002_	REQUEST	SHA_COVID_2020_GER_CH_5	In diesem Fall werde ich die wichtigsten Punkte der Erklärung für Sie zusammenfassen.	CAA002_	REQUEST	SHA_COVID_2020_FRE_BE_4	Dans ce cas, je vais vous en résumer les points les plus importants.

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Limitations

- Alignments are not manually checked
- Routing instructions and interviewer notes excluded by design
- Interface is in prototype stage
- No new corpus data after last iteration (not a MCSQ exclusive limitation)
    - By design could grow indefinitely, but depends on funds

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Next steps

- Adding more data
- New annotation (Named Entity Recognition)
- New interface functionalities
- Permanent archiving in CLARIN repository

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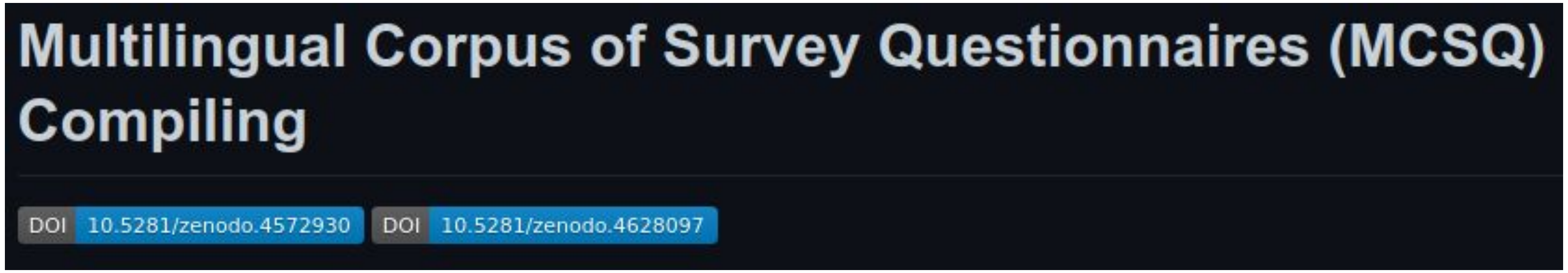
Conclusion

- MCSQ is a multilingual corpus (9 languages) of survey questionnaires
- Survey items stored as structured data with valuable metadata and annotations
- It is open-source and open access (from scratch)
- Follows FAIR (Findable Accessible Interoperable Reproducible) principles



Multilingual Corpus of Survey Questionnaires (MCSQ) Compiling

DOI 10.5281/zenodo.4572930 DOI 10.5281/zenodo.4628097

- News about the corpus are posted in the official webpage: https://www.upf.edu/web/mcsq/

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Thank you for your attention!

https://www.upf.edu/web/mcsq

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/in/sshopencloud

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