gesis
Leibniz Institute for the Social Sciences

The ofness and aboutness of survey questions

Improved indexing of social science data

Tanja Friedrich and Pascal Siegers, Data Archive for the Social Sciences at GESIS

Member of the Leibniz Association

Outline

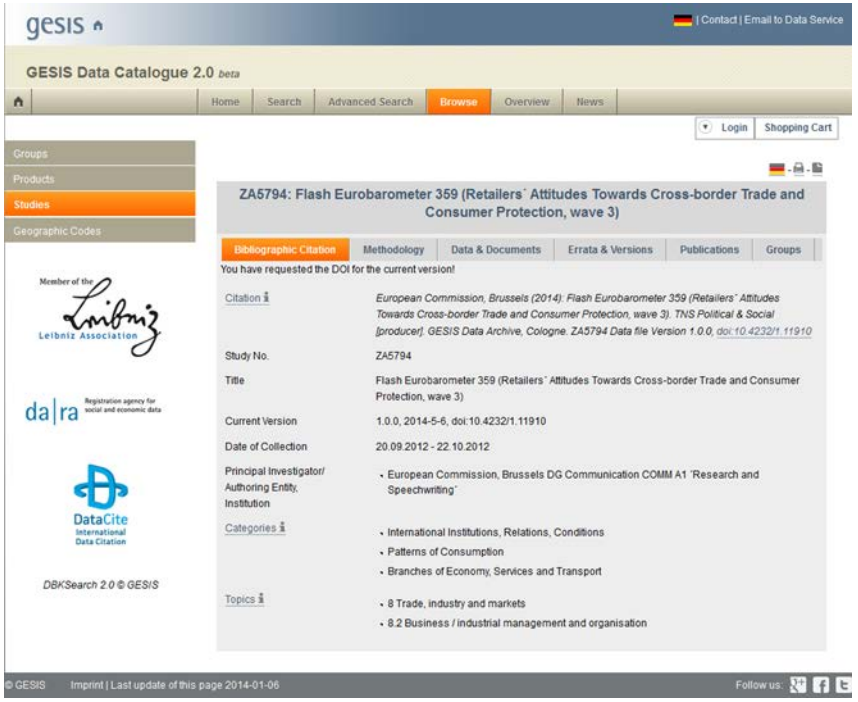
- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

Outline

- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

Introduction: Indexing survey data

- GESIS is documenting and distributing survey data for reuse
- Holdings are described in the data catalogue



ZA5800: International Social Survey Programme: Health and Health Care - ISSP 2011

Abstract

Evaluation of health care system in the country. Personal health. Health insurance.

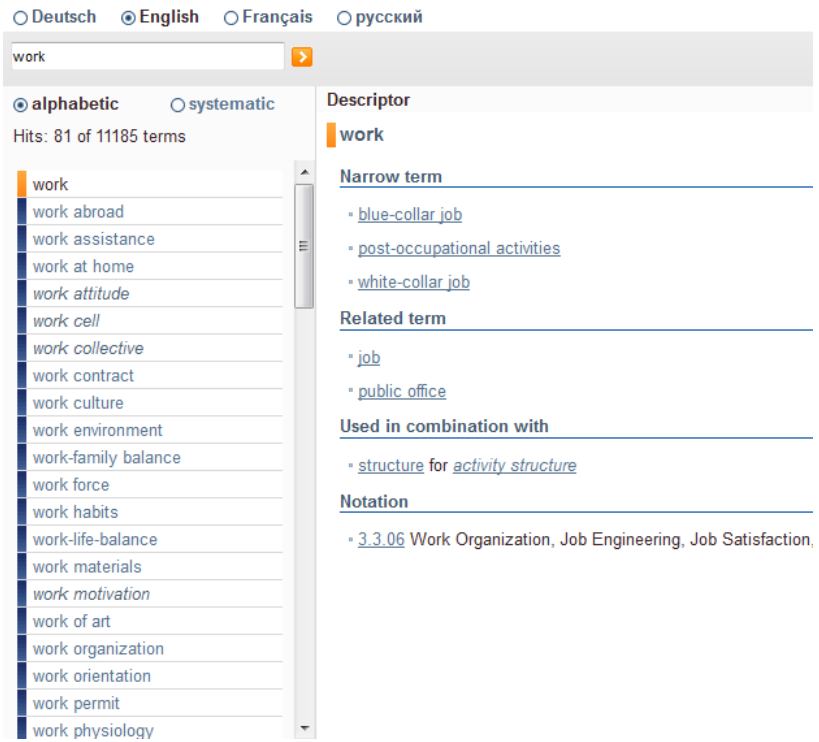
Themes: satisfaction with life (happiness); confidence in the educational system and the health system of the country; changes of health care system is needed; justification of better medical supply and better education for people with higher incomes; assessment of the health care system of the country (scale: estimation of improvement of the health care system, usage of health care services more than necessary, government should provide only basic health care services, inefficient health care system); willingness to pay higher taxes to improve the level of health care for all people in the country; attitude towards public funding of: preventive medical checkups, treatment of HIV/AIDS, programs to prevent obesity and conduct organ transplants; attitude towards the access to publicly funded health care for people without citizenship of the country and even if they behave in ways that damage their health; estimated part of people without access to the health care system; causes of severe health problems (behavior that damages health, environment, genes, poverty); evaluation of patients for smoking habits, age and the presence of young children for a needed heart operation; attitude towards alternative (traditional or folk) medicine (provides better solutions for health problems than

Introduction: Indexing survey data

- Study descriptions are very detailed, but not indexed with a controlled vocabulary

Introduction: Indexing survey data

- Study descriptions are very detailed, but not indexed with a controlled vocabulary
- Our goal is to index our data with a social science thesaurus for improved retrieval



Introduction: Indexing survey data

- Our approach: user-centred indexing

- Point of departure: How are users looking for survey data?

Introduction: Indexing survey data

- Users are not reusing entire surveys

Introduction: Indexing survey data

- Users are not reusing entire surveys
- Users are looking for data on the social science constructs that they are interested in

Introduction: Indexing survey data

- Users are not reusing entire surveys
- Users are looking for data on the social science constructs that they are interested in

Introduction: Indexing survey data

- Thus, users are not looking for entire surveys, but for results that fit their own research questions
- They find them in particular measurements of constructs that have been used in a survey
- These measurements are reflected in the survey questions that have been asked

Introduction: Indexing survey data

- For indexing, that means:
  - the indexing level is the question (or variable) level
  - the primary information source is the questionnaire

Introduction: Indexing survey data

- For indexing, that means:
  - the indexing level is the question (or variable) level
  - the primary information source is the questionnaire

QC1	How often do you access the Internet (for example, for sending emails, reading online news, chatting with friends or buying products online)?	
	(SHOW CARD – READ OUT – ONE ANSWER ONLY)	
		(332)
	Several times a day\ All the time (M)	1
	Once a day	2
	Several times a week	3
	Once a week	4
	Several times a month	5
	Once a month	6
	Less often	7
	Never	8
	DK	9
	EB77.2 QE1 TREND SLIGHTLY MODIFIED	
	ASK QC2 TO QC6 IF "EVER USE THE INTERNET", CODE 1 TO 7 IN QC1 – OTHERS GO TO QC7 (M)	
QC2	What devices do you use to access the Internet?	
	(SHOW CARD – READ OUT – MULTIPLE ANSWERS POSSIBLE)	
		(333-339)
	Desktop computer	1,
	Laptop computer\ Netbook	2,
	Tablet computer\ Touchscreen	3,
	Smartphone	4,
	TV (N)	5,
	Other (SPONTANEOUS)	6,
	DK	7,
	EB77.2 QE3 TREND MODIFIED	

Introduction: Indexing survey data

- Main challenge for indexing social science constructs from questionnaires:
  - While the measurement can be derived from the questionnaire, the measured construct oftentimes cannot (latent constructs)…
  - … because constructs themselves are not measurable but have to be broken down into measurable properties (operationalization)

Introduction: Indexing survey data

- For Example, a construct such as *education* is not in itself measurable, it has to be broken down into its measurable properties
- *"After all, no-one is measuring 'a table' […], but only a specific aspect: e.g. 'the height of the table' […]"* (Schnell et al. 2011, 119, original in German)

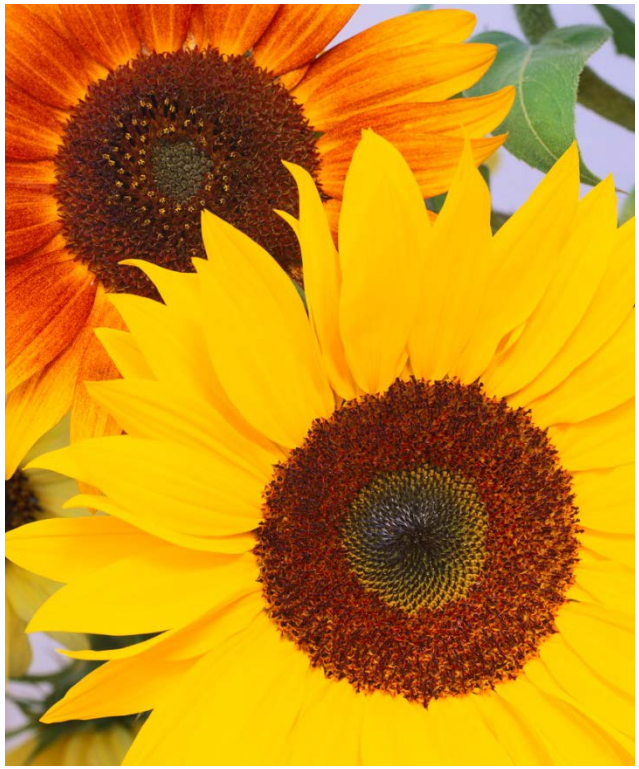
Introduction: Indexing survey data

- Creating measurements from constructs is done by operationalization
- *Operationalization is the process of specifying the range of observable objects representing the theoretical construct. It defines the measurement of the latent constructs.* (cf. Schnell et al. 2011, 121)

Introduction: Indexing survey data

→Conclusion: due to operationalization we have two subject layers in surveys: constructs and their measurements

→How to capture them both in indexing?

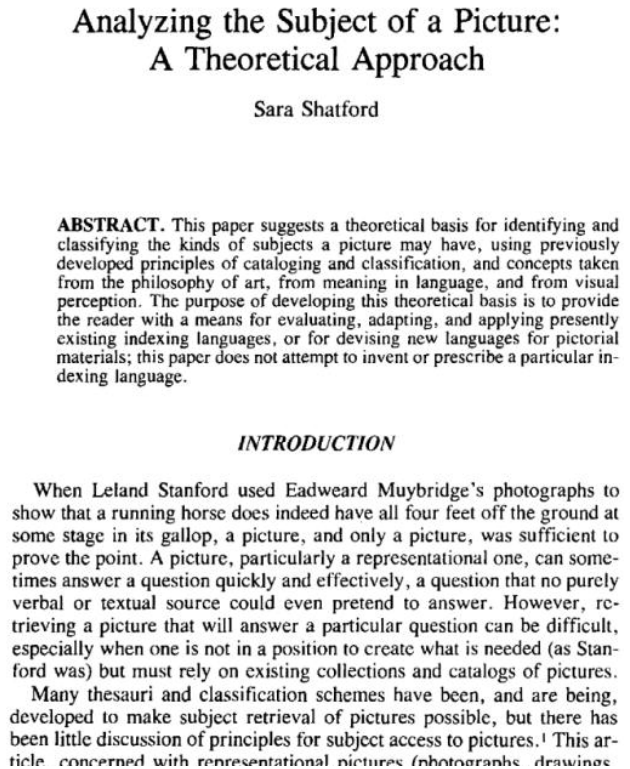


Outline

- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

Ofness and aboutness according to Sara Shatford

- To analytically capture the two subject levels of survey data, we draw on Sara Shatfords theory on indexing pictures from 1986



Analyzing the Subject of a Picture:
A Theoretical Approach

Sara Shatford

ABSTRACT. This paper suggests a theoretical basis for identifying and classifying the kinds of subjects a picture may have, using previously developed principles of cataloging and classification, and concepts taken from the philosophy of art, from meaning in language, and from visual perception. The purpose of developing this theoretical basis is to provide the reader with a means for evaluating, adapting, and applying presently existing indexing languages, or for devising new languages for pictorial materials; this paper does not attempt to invent or prescribe a particular indexing language.

INTRODUCTION

When Leland Stanford used Eadweard Muybridge's photographs to show that a running horse does indeed have all four feet off the ground at some stage in its gallop, a picture, and only a picture, was sufficient to prove the point. A picture, particularly a representational one, can sometimes answer a question quickly and effectively, a question that no purely verbal or textual source could even pretend to answer. However, retrieving a picture that will answer a particular question can be difficult, especially when one is not in a position to create what is needed (as Stanford was) but must rely on existing collections and catalogs of pictures.

Many thesauri and classification schemes have been, and are being, developed to make subject retrieval of pictures possible, but there has been little discussion of principles for subject access to pictures.[1] This article concerned with representational pictures (photographs, drawings

Ofness and aboutness according to Sara Shatford

- Sara Shatford (Shatford 1986, Shatford Layne 1994) developed a theory of indexing pictures, drawing on different aspects and attributes that are particularly important for the indexing of pictures
- Of particular importance are the aspects ofness and aboutness

Ofness and aboutness according to Sara Shatford

- The subject of a picture according to Shatford:
  - Ofness: referring to the concrete and objective subject (or factual meaning)
  - Aboutness: referring to the abstract and subjective subject (or expressional meaning)

Ofness and aboutness according to Sara Shatford

"For example, an allegorical image might be *of* a man and a lion, but be *about* pride […];

or an image *of* a person crying might be *about* sorrow."

(Shatford Layne 1994, 584)

Ofness and aboutness according to Sara Shatford

To sum up …

… ofness refers to what is visibly depicted in the picture, while

… aboutness refers to an intended meaning that is not visible in the picture, but identifiable on the grounds of world knowledge

Outline

- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

The ofness and aboutness of survey data

- Shatford's theory can help us to identify the subjects of survey data in order to improve
  - indexing of data and
  - retrieval of data

The ofness and aboutness of survey data

- The aboutness of survey data refers to the construct that the primary investigator intended to investigate

The ofness and aboutness of survey data

- The ofness of survey data is the literal manifestation of the operationalization of this construct, as it is found in the questionnaire

QC1	How often do you access the Internet (for example, for sending emails, reading online news, chatting with friends or buying products online)?

(SHOW CARD – READ OUT – ONE ANSWER ONLY)

	(332)
Several times a day\ All the time (M)	1
Once a day	2
Several times a week	3
Once a week	4
Several times a month	5
Once a month	6
Less often	7
Never	8
DK	9

EB77.2 QE1 TREND SLIGHTLY MODIFIED

ASK QC2 TO QC6 IF "EVER USE THE INTERNET", CODE 1 TO 7 IN QC1 – OTHERS GO TO QC7 (M)

QC2	What devices do you use to access the Internet?

(SHOW CARD – READ OUT – MULTIPLE ANSWERS POSSIBLE)

	(333-339)
Desktop computer	1,
Laptop computer\ Netbook	2,
Tablet computer\ Touchscreen	3,
Smartphone	4,
TV (N)	5,
Other (SPONTANEOUS)	6,
DK	7,

EB77.2 QE3 TREND MODIFIED

The ofness and aboutness of survey data

- Example: *During the last week, how often have you been talking to your neighbour about politics?* (Klingemann/Mochmann 1975, 185, original in German)

The ofness and aboutness of survey data

- Ofness: respondents tell us *of* their talking about politics with their neighbour
- Aboutness: respondents tell us *about* their political interest and *about* their relationship to neighbours

The ofness and aboutness of survey data

- Summing up ofness and aboutness of survey data:
  - Ofness: concrete or objective aspects of the measurement found in the questionnaire wording
  - Aboutness: the abstract or subjective aspects of the measurement (even if they are not in the question wording)

The ofness and aboutness of survey data

- Why is it important to index aboutness?
- By indexing aboutness, we access the construct level of what is being measured
- Fits search behavior of (secondary) users
- Facilitates search if very different question wordings refer to the same construct

The ofness and aboutness of survey data

- Example for the ofness of survey data
  - *A country's cultural life is undermined by immigrants* (European Values Study 2008, ZA4800)
  - Ofness: CULTURE; IMMIGRATION

The ofness and aboutness of survey data

- Same example for the aboutness of survey data:
  - *A country's cultural life is undermined by immigrants* (European Values Study 2008; ZA4800)
  - Aboutness: ATTITUDE; MIGRANT

Q78 Please look at the following statements and indicate where you would place your views on this scale?

A. (v268)

Immigrants take jobs away from natives in a country										Immigrants do not take jobs away from natives in a country	DK	NA
1	2	3	4	5	6	7	8	9	10		88	99

B. (v269)

A country's cultural life is undermined by immigrants										A country's cultural life is not undermined by immigrants	DK	NA
1	2	3	4	5	6	7	8	9	10		88	99

C. (v270)

Immigrants make crime problems worse										Immigrants do not make crime problems worse	DK	NA
1	2	3	4	5	6	7	8	9	10		88	99

D. (v271)

Immigrants are a strain on a country's welfare system										Immigrants are not a strain on a country's welfare system	DK	NA
1	2	3	4	5	6	7	8	9	10		88	99

The ofness and aboutness of survey data

- Identifying aboutness of survey data, is not easy …

The ofness and aboutness of survey data

- Identifying aboutness requires …

The ofness and aboutness of survey data

- Identifying aboutness requires …

  … to examine the context of the question,

The ofness and aboutness of survey data

- Identifying aboutness requires …
  - … to examine the context of the question,
  - … to have field knowledge

The ofness and aboutness of survey data

- Identifying aboutness requires …
  - … to examine the context of the question,
  - … to have field knowledge
  - … and data literacy

The ofness and aboutness of survey data

- Identifying aboutness requires …
  - … to examine the context of the question,
  - … to have field knowledge
  - … and data literacy

→ This corresponds to the knowledge needed to index the aboutness of a picture (Shatford 1984)

Outline

- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

How to index ofness and aboutness

We apply a concept of syntactic indexing, based on the theory of ofness and aboutness:

- Ofness can be captured by a simple combination of thesaurus terms (term linking)
- Aboutness can be captured by combining directive and subject terms (role operators)

How to index ofness and aboutness

- Term linking and role operators are known methods of syntactic indexing (e.g. Lancaster 1998)
- We combine subject terms (e.g. CORRUPTION) with directive terms (e.g. ATTITUDE, EXPERIENCE)

How to index ofness and aboutness

- The term linking and role operators allow for identifying measurable constructs with the indexing, like
  - *attitudes towards corruption*
  - *experience with corruption*

How to index ofness and aboutness

Social Science Construct

Contents/topics (subject)

- any subject area relevant in social science
- E.g. work, family religion, education

Attributes (direction):

- Cognition
- Evaluation
- Affection
- Action
- *[objective characteristics]*

Measurable unit

How to index ofness and aboutness

Subject terms

- Specify the contents of the measurement
- As specific as possible
- Combinations of terms, if necessary

Directive terms

- Specify the attributes of the measurement
- Limited heterogeneity in directive terms to facilitate faceted retrieval

How to index ofness and aboutness

Examples for directive terms:

- **Cognition**
  - PERCEPTION
  - KNOWLEDGE
  - AWARENESS
  - INTEREST
  - BELIEF
  - ORIENTATION
- **Evaluation**
  - ATTITUDE
  - PREFERENCE
  - JUDGMENT
  - PREJUDICE
  - SATISFACTION
  - ACCEPTANCE/APPROVAL
  - REJECTION/REFUSAL
- **Affection**
  - MOOD
  - FEAR
  - ANGER/ANNOYANCE
  - HAPPINESS
  - HATE
  - LOVE
- **Action**
  - BEHAVIOR
  - USE/UTILIZATION
  - CHOICE
  - EXPERIENCE
  - INTERACTION
  - COMMUNICATION
  - CONTACT

How to index ofness and aboutness

- Linking subject terms captures ofness; linking them with directive terms reveals the aboutness
- Each directive and subject term combination represents a measurable unit of interest to the secondary researcher

How to index ofness and aboutness

How to index ofness and aboutness

Measurable Unit (e.g. survey question)

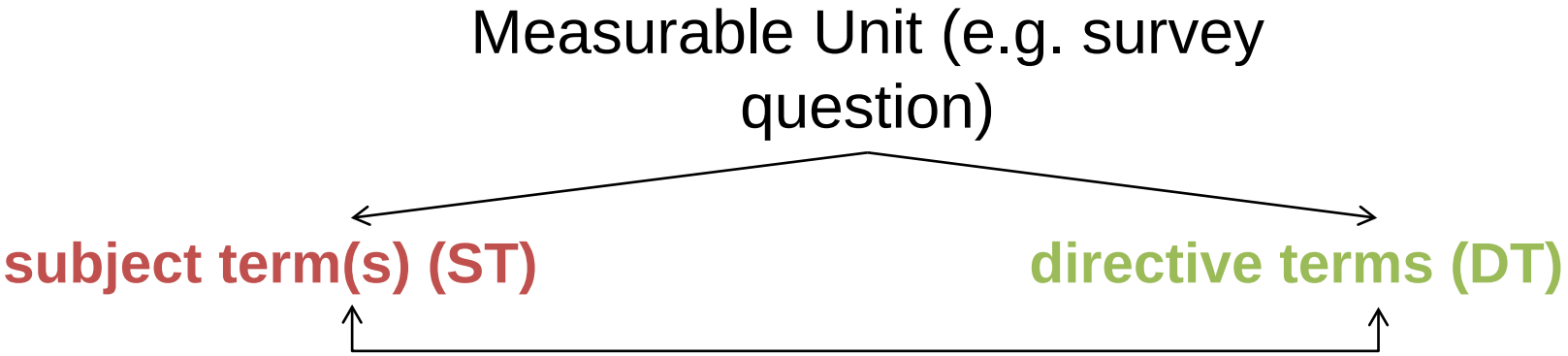
How to index ofness and aboutness

Measurable Unit (e.g. survey question)

subject term(s) (ST)

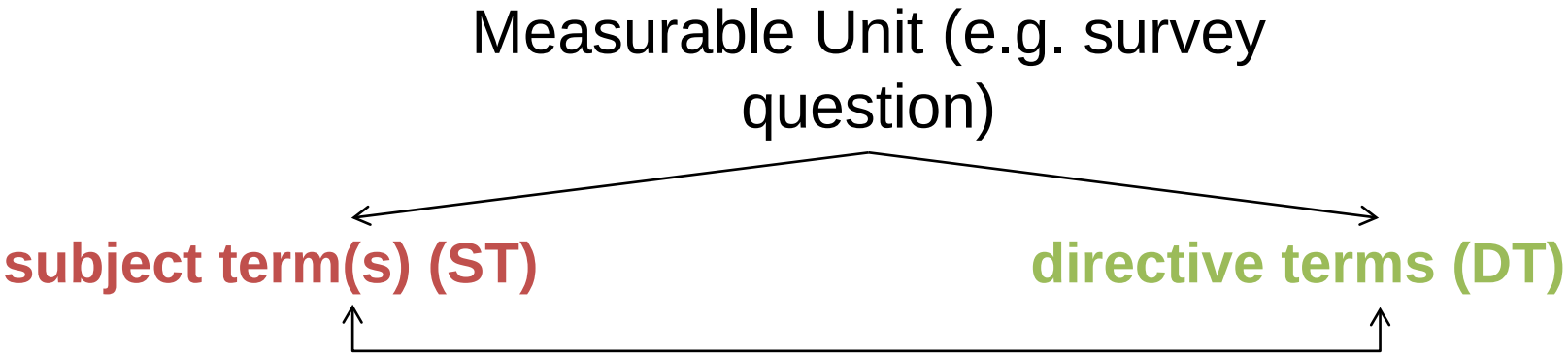
directive terms (DT)

How to index ofness and aboutness



Precoordination/syntactic indexing
= linked terms that are specified by role operators

How to index ofness and aboutness



How to index ofness and aboutness

„**There is corruption** in the in the national **public institutions** in Germany.“ (Eurobarometer 76.1; ZA5565)

Directive term: **PERCEPTION**

Subject term(s): **CORRUPTION**, **PUBLIC INSTITUTIONS**

Syntactic Indexing: **PERCEPTION**; **CORRUPTION**; **PUBLIC INSTITUTIONS**

„**Are you personally affected** by **corruption** in your daily activities?“ (Eurobarometer 76.1; ZA5565)

Directive term: **EXPERIENCE**

Subject term(s): **CORRUPTION**; **EVERYDAY LIVE**

Syntactic Indexing: **EXPERIENCE**; **CORRUPTION**; **EVERYDAY LIVE**

How to index ofness and aboutness

„**There is corruption** in the in the national **public institutions** in Germany.“ (Eurobarometer 76.1; ZA5565)

Directive term: **PERCEPTION**

Subject term(s): **CORRUPTION, PUBLIC INSTITUTIONS**

Syntactic Indexing: **PERCEPTION; CORRUPTION; PUBLIC INSTITUTIONS**

Ofness

„**Are you personally affected** by **corruption** in your daily activities?“ (Eurobarometer 76.1; ZA5565)

Directive term: **EXPERIENCE**

Subject term(s): **CORRUPTION; EVERYDAY LIVE**

Syntactic Indexing: **EXPERIENCE; CORRUPTION; EVERYDAY LIVE**

How to index ofness and aboutness

„There is corruption in the in the national public institutions in Germany.“ (Eurobarometer 76.1; ZA5565)

Directive term: PERCEPTION

Subject term(s): CORRUPTION, PUBLIC INSTITUTIONS

Syntactic Indexing: PERCEPTION; CORRUPTION; PUBLIC INSTITUTIONS

Aboutness

„Are you personally affected by corruption in your daily activities?“ (Eurobarometer 76.1; ZA5565)

Directive term: EXPERIENCE

Subject term(s): CORRUPTION; EVERYDAY LIVE

Syntactic Indexing: EXPERIENCE; CORRUPTION; EVERYDAY LIVE

How to index ofness and aboutness

„The practice of **Islam should be restriced** in Germany.“ (ALLBUS 2012; ZA4614)

Directive term: **ATTITUDE**

Subject term(s): **ISLAM; RELIGIOUS FREEDOM**

Syntactic Indexing: **ATTITUDE**; **ISLAM; RELIGIOUS FREEDOM**

„**The presence** of **Muslims** in Germany **leads to conflicts**.” (ALLBUS 2012; ZA4614)

Directive term: **PERCEPTION / EXPECTATION**

Subject term(s): **MUSLIM; RELIGIOUS CONFLICT**

Syntactic Indexing: **PERCEPTION**; **ISLAM; RELIGIOUS CONFLICT**

Outline

- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

Ofness and aboutness in retrieval

- The system of syntactic indexing allows for various faceting mechanisms in retrieval:
  - We can offer facets by our two role operators (subject and directive terms), e.g. as “Refine by subject” and “Refine by intention”
  - We can offer facets with linked terms that allow for retrieval of measurements, e.g. as “Refine by concept/construct”

Simple Search

Quick Search

Member of the Leibniz Association

da|ra Registration agency for social and economic data

DataCite International Data Citation

DBKSearch 2.0 © GESIS

Your search: 'middle east' in all fields (English contents)

No groups found.

No products found.

Found studies: 20

1 2

Select all none		No.	Title	Collection Date	Order Download
1	☐	ZA4262	Transatlantic Trends 2005	30.05.2005 - 17.06.2005	
2	☐	ZA4218	Worldviews 2001 (Transatlantic Trends)	06.2002 - 07.2002	
3	☐	ZA2691	Panel of the University of the Arts in Berlin 1975 - 1995	08.1975 - 03.1995	
4	☐	ZA2561	Czechoslovakian 1990 Post-Election Survey	10.1990 - 11.1990	
5	☐	ZA5011	Lines of Conflict of Egyptian Society 1986-1988: Remigration, Segregation, Islam (Household Census of Six Egyptian Villages: Household Data)	05.1987 - 07.1988	
6	☐	ZA5012	Lines of Conflict of Egyptian Society 1986-1988: Remigration, Segregation, Islam (Household Census in 6 Egyptian Villages: Migrant Data)	05.1987 - 07.1988	
7	☐	ZA5023	Lines of Conflict of the Egyptian Society 1986-1988: Remigration, Segregation, Islam (Wives of Returned Migrant Workers)	05.1987 - 07.1987	
8	☐	ZA2446	Attitudes to Security Policy in the Federal Republic (June 1986)	06.1986 - 06.1986	
9	☐	ZA1400	High School Graduates in Schleswig-Holstein 1981	04.1981 - 05.1981	

Refine search / narrow results

Refine by topic of study

International politics (19)
Conflict, security and peace (18)
Society, culture (10)

Refine by questions

Refine by subject

Middle East (20)
Conflict (19)
Israel (19)
Peace (19)
Palestinian State (19)
USA (18)
Egypt (17)

Refine by intention

Attitude (15)
Behaviour (12)
Knowledge (9)

Refine by country

USA (15)
Israel (10)
France (8)
Australia (3)

Refine by time period

2003 (10)
2012 (5)
2008 (5)
2010 (3)

Ofness and aboutness in retrieval

- Syntactic indexing at the variable level and faceting mechanisms in retrieval are useful for:
- question data bases
  - Enabling search for specific measurements when designing questionnaires.
- multilingual documentation of questionnaires
  - Enabling secondary use of foreign data if no English translation of the questionnaire is available.

Outline

- Introduction: Indexing survey data
- Ofness and aboutness according to Sara Shatford
- The ofness and aboutness of survey data
- How to index ofness and aboutness
- Ofness and aboutness in retrieval
- Conclusion

Conclusion

- Indexing survey data requires to consider different subject levels
- The theory of ofness and aboutness is suitable to capture the different levels
- Use of a syntax with term linking and role operators enables systematic indexing at the aboutness level

Conclusion

- Term linking and role operators enable us to make measurable units searchable for secondary researchers
- Syntactic indexing of survey data allows for sophisticated faceted searching

Thank you for your attention!

Tanja Friedrich

tanja.friedrich@gesis.org

Pascal Siegers

pascal.siegers@gesis.org

References

- KLINGEMANN, H.D./ MOCHMANN, E. (1978): 6. Sekundäranalyse. *Techniken der empirischen Sozialforschung*, ed. By Jürgen van Koolwijk and Maria Wieken-Mayser. Vol. 2, Untersuchungsformen. München, R. Oldenbourg Verlag, 178-194.
- LANCASTER, F.W. (1998): *Indexing and Abstracting in Theory and Practice*, 2nd Ed. London, Library Association Publishing.
- SCHNELL, R./ HILL, P.B./ ESSER, E. (2011): *Methoden der empirischen Sozialforschung.* 9. Ed. München, R. Oldenbourg Verlag.
- SHATFORD, S (1986): Analyzing the Subject of a Picture. A Theoretical Approach. *Cataloging & Classification Quarterly*, 6(3), 39-62.
- SHATFORD LAYNE, S. (1994): Some Issues in the Indexing of Images. *Journal of the American Society for Information Science*. 45(8), 583-588.