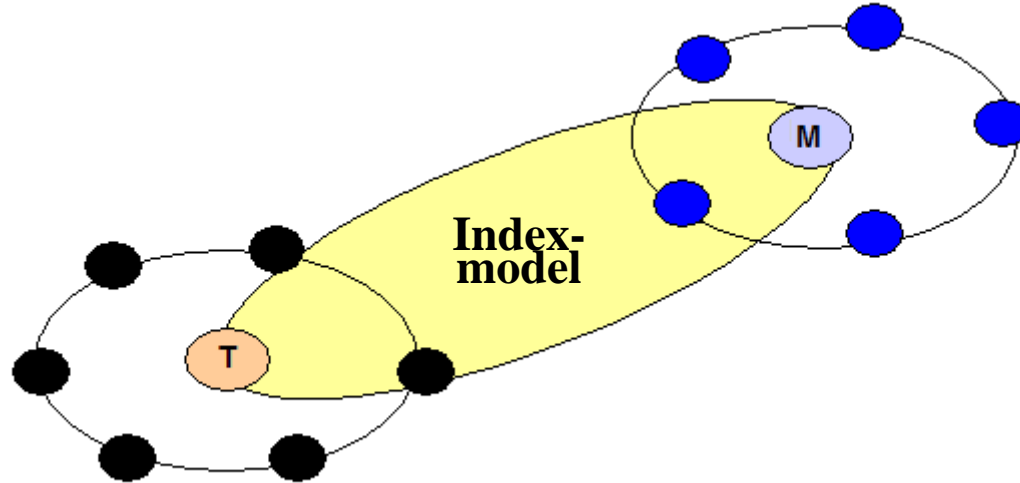


Derivative Meta-Photoatlas

Alexander Wolodtschenko

Semiotic Analysis of Atlas Index

(On example of National Atlas of Germany)



Dresden
2022

Table of contents of meta-photoatlas

0. Introduction	3-4
1. About National Atlas of Germany (NAG/NAD)	5-11
2. Atlas Index Volume	12-15
3. Atlas Indexes	16
3.1. Regional Index	17
3.2. Systematic Index	18-22
3.3. Alphabetic Index	23-24
3.4. List of Authors	25-26
4. Conclusion	27
5. References and Imprint	28

0. Introduction

This photoatlas is a derivative semiotic construction from atlas index of 12 volumes of National Atlas of Germany (NAD) and an authors monography. Atlas continues projects and activities of section "Umwelt- and Karto/ Atlassemiotics" of the German Society for Semiotics (DGS). 2007, in the monograph (Wolodtschenko 2007) was proposed a prototype for a new meta-atlas, e.g. a new volume of NAD as an analysis, evaluation or expertise atlas. This atlas can also form a new products as exploratory atlases within the framework of new meta-atlassemiotic research.

This photoatlas „Semiotic Analysis of Atlas Index” is based on the (Theme-Module)-method of semiotic evaluation, which has been used in carto/atlassemiotics since the 2000s (Wolodtschenko 2007).

From a lexical point of view, each atlas register represents spatial and factual information, a scientific research that is recorded and constructed systematically, according to factual, chronological, alphabetical or other points of view. From an onomastic point of view, each atlas register can be consider as a systematic collection of generic and proper names.

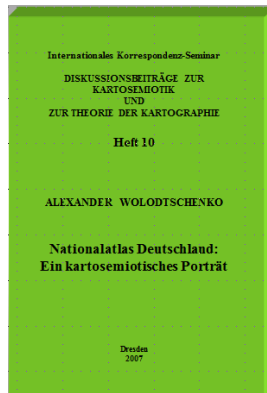
From a semiotic-ontological point of view, each atlas register is a table of contents-related and information-modular construction with certain ontological structural models and knowledge paths.

0. Introduction

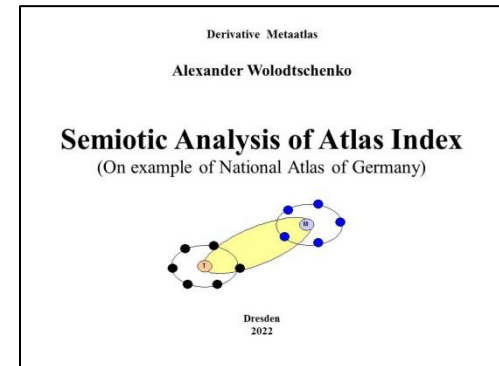
Atlas Index



Monography



Meta-photoatlas



This meta-photoatlas „Semiotic Analysis of Atlas Index” is a derivative semiotic-analytical product based on:

- Atlas Index (vol. 13) of National Atlas of Germany (eds. Hänsgen, D., Tzschaschel, S. 2007) and
- b) monography „Nationalatlas Deutschland: Ein kartosemiotisches Porträt“ (Wolodtschenko 2007).

1. About National Atlas of Germany

With the publication of the twelfth themed volume "Life in Germany" in the summer of 2006 and the index volume in the spring of 2007, a large-scale project, the "National Atlas of Germany/NAD", was completed in the united Germany. 1981, in the GDR was completed one-volume National Atlas of GDR ("Atlas DDR").

The 12 thematic volumes of the NAD contain information on the geographical /social-nature conditions of a state; the register accumulates selected information that is suitable for searching and navigating in the semantic-conceptual space of the 12 thematic volumes.

The NAD comprises around 2200 pages, almost 650 articles, around 2000 maps and 1500 illustrations, 200 tables and over 800 photos (Nationalatlas... 2007).

The index (register) volume of the NAD is a reference one for spatial – geographic information from 12 thematic volumes. Access to information is realized using the regional register and catalog maps; systematic subject index of articles, maps and illustrations; alphabetical subject index and author's index.

1. About National Atlas of Germany

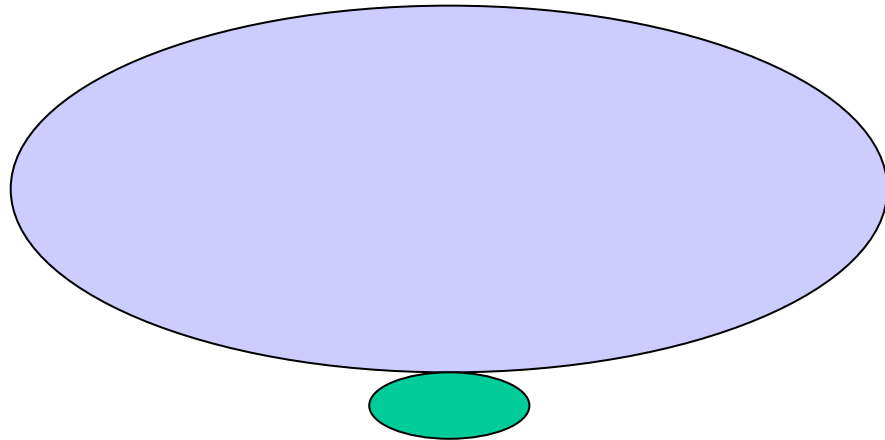
The table presents a list of editors of 12 thematic volumes and atlas index volume with year of publication and number of pages (Wolodtschenko 2007).

Nr	Themen	Mitherausgeber	Jahr	Seiten
1	Gesellschaft und Staat	Heinritz, G., Tzschaschel, S., Wolf, K.	2000	164
2	Relief, Boden und Wasser	Liedtke, H., Mäusbacher, R., Schmidt, K.H.	2003	174
3	Klima, Pflanzen- und Tierwelt	Kappas, M., Menz, G., Richter, M.	2003	179
4	Bevölkerung	Gans, P., Kemper, F.-J.	2001	164
5	Dörfer und Städte	Friedrich, K., Hahn, B., Popp, H.	2002	196
6	Bildung und Kultur	Mayr, A., Nutz, M.	2002	184
7	Arbeit und Lebensstandard	Faßmann, H., Klagge, B., Meusburger, P.	2006	162
8	Unternehmen und Märkte	Haas, H.-D., Heß, M., Klohn, W., Windhorst, H.-W.	2004	196
9	Verkehr und Kommunikation	Deiters, J., Gräf, P., Löffler, G.	2001	172
10	Freizeit und Tourismus	Becker, C., Job, H.	2000	166
11	Deutschland in der Welt	Mayr, A., Stadelbauer, J.	2005	180
12	Leben in Deutschland	Heinritz, G., Lentz, S., Tzschaschel, S.	2006	185
-	Register	Hänsgen, D., Tzschaschel, S.	2007	120

1. About National Atlas of Germany

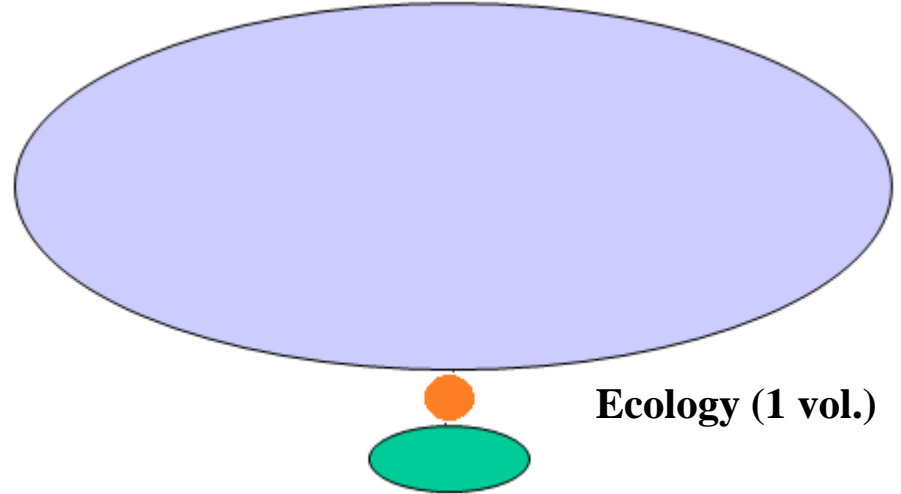
Dichotomic (and trichotomic) models

Society (10 vol.)



Nature (2 vol.)

Society (10 vol.)



Ecology (1 vol.)

Nature (2 vol.)

Almost all complex national atlases are based on traditional dichotomous conceptions of themes: **society and nature**. With 10 vol.(83%) of social components or human geographical aspects, the NAD (structural model, left) is a typical national atlas for industrialized countries. A third theme “society/nature” (mixed area) with ecological or environment-related components should be an important part of any national atlas (proposal for trichotomic structural model, right). The theme “ecology” is missing from the NAD.

1. About National Atlas of Germany

Semantic determined themes (after Wolodtschenko 2007))

GESELLSCHAFT		NATUR
mono-thematisch	dual-thematisch	trio-thematisch
Bevölkerung	Gesellschaft und Staat	Klima, Pflanzen- und Tierwelt
Deutschland in der Welt	Dörfer und Städte	Relief, Boden und Wasser
Leben in Deutschland	Bildung und Kultur	
	Arbeit und Lebensstandard	
	Unternehmen und Märkte	
	Verkehr und Kommunikation	
	Freizeit und Tourismus	
83%		17%

10 volumes



2 volumes

1. About National Atlas of Germany

Thematic groups of NAD (Volumes 1-12)

mono-thematisch	dual-thematisch	trio-thematisch
Bevölkerung/4	Gesellschaft und Staat/1	Relief, Boden und Wasser/2
Deutschland in der Welt /11	Dörfer und Städte/5	Klima, Pflanzen- und Tierwelt/3
Leben in Deutschland/12	Bildung und Kultur/6	
	Arbeit und Lebensstandard/7	
	Unternehmen und Märkte/8	
	Verkehr und Kommunikation/9	
	Freizeit und Tourismus/10	
17%	58%	25%

For the NAD, three groups of topics (single/mono-, dual- and trio-thematic groups) can be distinguished (after Wolodtschenko 2007). A dominant group is dual-thematic one with 7 of 12 thematic volumes.

1. About National Atlas of Germany

Module-related potential of NAD (Volumes 1-12)

Bd.	Thema	Semiotisches Potential		Thema	Semiotisches Potential		Bd.
		in %	in Diagrammform		in %	in Diagrammform	
1	Gesellschaft und Stadt	K= 42 T= 36 A= 22		Arbeit und Lebensstandard	K= 37 T= 30 A= 33		7
2	Relief, Boden und Wasser	K= 34 T= 41 A= 25		Unternehmen und Märkte	K= 39 T= 40 A= 21		8
3	Klima, Pflanzen- und Tierwelt	K= 40 T= 38 A= 22		Verkehr und Kommunikation	K= 36 T= 42 A= 22		9
4	Bevölkerung	K= 32 T= 35 A= 33		Freizeit und Tourismus	K=37 T=29 A=34		10
5	Dörfer und Städte	K= 40 T= 46 A= 14		Deutschland in der Welt	K=37 T=36 A=27		11
6	Bildung und Kultur	K= 38 T= 41 A= 21		Leben in Deutschland	K=43 T=34 A=23		12

The table presents the module-related semiotic potential of 12 volumes NAD in diagram form and in % (after Wolodtschenko 2007). Each diagram includes three semiotic information modules as meta-variables: maps (**K**arte), text (**T**ext) and illustrations (**A**bbildung). Maps and text information dominate the 12 volumes. No atlas volume has a meta-variable with a value of 50% or more. All atlases are mixed atlases.

1. About National Atlas of Germany

Semantic field of 12 pre-coordinated topics (list in German)

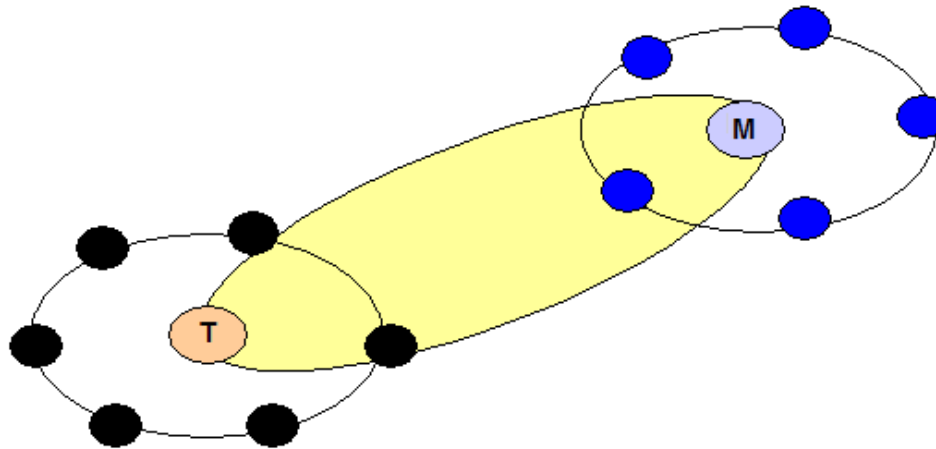
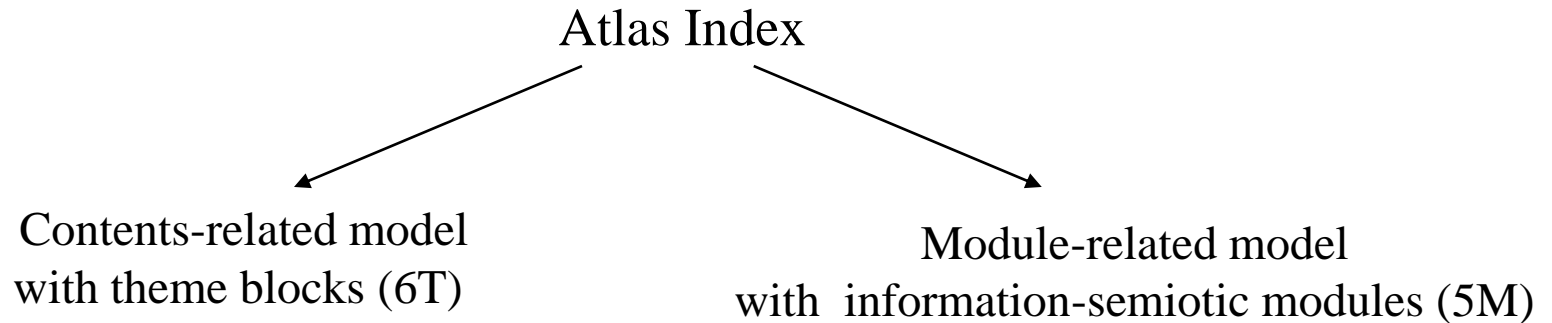
Einzelne Themen des NAD (in alphabetischer Reihe)	Einzelne Themen des NAD (nur Gesellschaftsthemen)	Einzelne Themen des NAD (nur Naturthemen)
Arbeit	Arbeit	Boden
Bevölkerung	Bevölkerung	Klima
Bildung	Bildung	Pflanzenwelt
Boden	Deutschland in der Welt	Relief
Deutschland in der Welt	Dörfer	Tierwelt
Dörfer	Freizeit	Wasser
Freizeit	Gesellschaft	
Gesellschaft	Kommunikation	
Klima	Kultur	
Kommunikation	Leben in Deutschland	
Kultur	Lebensstandard	
Leben in Deutschland	Märkte	
Lebensstandard	Staat	
Märkte	Städte	
Pflanzenwelt	Tourismus	
Relief	Unternehmen	
Staat	Verkehr	
Städte		
Tierwelt		
Tourismus		
Unternehmen		
Verkehr		
Wasser		
23	17	6

The semantic conceptual field of 12 pre-coordinated topics (mono-, dual-, tri-topics) can be divided into 23 individual ones. The lists of these topics offer good opportunities for comparing topic groups and individual topics as well as for analyzing the thematic breadth or thematic gaps. It is not difficult to determine that the following individual topics are missing from the theme “society”: ecology, history, religion; natural resources or mineral resources are missing in the theme “nature”.

The table presents a list of 23 individual topics (in alphabetic order), 17 topics in the “society “ and 6 topics in the “nature” (after Wolodtschenko 2007).

2. Atlas Index Volume

Structural and orbit- models



The orbit-model of semiotic potential (after Wolodtschenko 2007) of atlas index includes six theme blocks (6T) and five information-semiotic modules (5M).

2. Atlas Index Volume

Thematic contents-related model

INDEX Volume						
Titel	Thematic Blocks					
	Auxiliary Block		Basic Block			
			I	II	III	IV
	Contents	Preamble Indication for Using	Regional Index, Index of Maps	Systematic Index of Titels of Articles, Maps and Illustration	Alphabetic Index	List of Authors

1-4pp.	5p.	6p.	7-21pp.	22-82pp	83-117pp.	117-120pp.
			14p.=11,7%	61p.=50,8%	35p.=29,2%	4p.=3.3%
6 p.=5%			114 p. = 95%			

Thematic block is divided into auxiliary (2) and basic blocks (4).

2. Atlas Index Volume Meta-variablen model

a)

Information-semiotic Moduls (5M)				
1	2	3	4	5
Text	Maps	Titel pages	Legend	Pictogram/ Vignette
108,5 p.	5,8p.	4,0p.	1,7p.	0,1p.
90,4%	4,8%	3,3%	1,4%	0,08%
120p. = 100%				

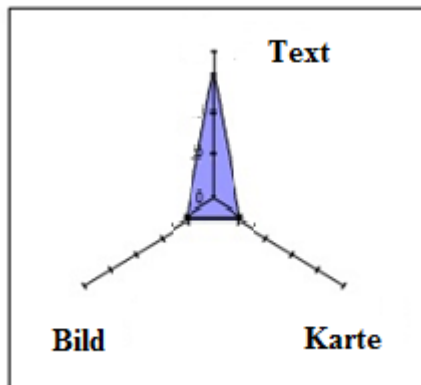
b)

<p style="text-align: center; font-weight: bold; font-size: small;">0.1 Statistik</p> <p style="font-size: x-small;">0.1.1 Clusteranalyse Regionale Differenzierung der Wirtschaftskraft: eine Faktoren- und Clusteranalyse. 2006 - IX 25 M Faktoren-, Cluster- und Diskriminanzanalyse. 2001 - IV 50 M Clusteranalyse. 2001 - IV 56 M Methodische Anmerkung - Clusteranalyse. 2006 - XII 673 M</p> <p style="font-size: x-small;">0.1.2 Gini-Koeffizient Der Gini-Koeffizient G (i. Schnitz). 1981 - IX 74 M</p> <p style="font-size: x-small;">0.1.3 Lorenzkurve Bevölkerungsverteilung - Lorenzkurve. Rheinland, Westfalen 1815-1998 - IV 307 G</p> <p style="font-size: x-small;">0.1.4 Potentialbestimmung Der Berechnungsmodus für das Bevölkerungspotential. 2001-IV 42 M</p> <p style="font-size: x-small;">0.1.5 Ranking Räume ordnen. Rankings für Staaten, Städte und Regionen. 2006-XII 26-27 B</p> <p style="font-size: x-small;">0.1.6 Prognosen und Szenarien Szenarienrechnungen zur Abschätzung der Wirkung von Erosionsschutzmaßnahmen a) Hafe, kontinentale Binnenschifffahrt. Talpaare. Lebensstile 2000 - II 1095 K3 Szenarienrechnungen zur Abschätzung der Wirkung von Erosionsschutzmaßnahmen b) Hafe, inner-sektorale Binnenschifffahrt. Talpaare. Lebensstile 2000 - II 1095 K3 Konstruktiv einer Karte der potentiellen natürlichen Vegetation mittels Vegetationsmodellierung. 1990 - II 862 G Die Bevölkerung der Zukunft. 2001 - IV 142-145 B Bevölkerungstrend. Df 19972013 - IV 1422 K2 Abwanderungen. De 2011 - IX 1415 K2 Prognose der Bevölkerungsentwicklung. De 19972013-IV 1414 K2 Prognose der Rentenversicherungspflichtige. Df 19972016-IV 232 G Demographische Entwicklung. Df bis 2015 - IV 294 K2 Entwicklungs- und Abwanderung. Df 19992016-IV 315 G Bevölkerungspyramiden. Df 19992016 - IV 316 G Entwicklung und Prognose der Schülerzahlen. Df 1991-2015 - VI 262 G Lebenserwartungstendenzen. Df 1992-2013 - VI 324 G Trend der Beschäftigungsentwicklungen. Df 2010-2015 - VII 113 K2 Zufriedenheit mit Lebensbereichen: Erwartungen in 5 Jahren. Df 2003-VII 292 K1 Veränderung des globalen Energieums. W 2006-2100-VIII 324 G Güterverkehrsprognose. Eu 20102015 - IX 904 G</p> <p style="font-size: x-small;">0.1.7 Shift-Analyse Strukturwandel im verarbeitenden Gewerbe. BRDd. 1970-1987-VIII 1074 K3 Shift-Analyse. 2CCA - VIII 1074 M Strukturwandel im verarbeitenden Gewerbe. DA 1995-2000 - VIII 1097 K3</p>				
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The table (a) shows the structural model of the index volume with the help of information-semiotic modules (table b): text, maps, title pages, legends, pictograms) and corresponding page numbers and in percentage (%).

2. Atlas Index Volume Meta-variable model

Information-semiotic Moduls (5M)				
1	2	3	4	5
Text	Maps	Titel pages	Legend	Pictogram/ Vignette
108,5 p.	5,8p.	4,0p.	1,7p.	0,1p.
90,4%	4,8%	3,3%	1,4%	0,08%
120p. = 100%				



The information-semiotic module – text (with 90,4%) is a dominated module of atlas index volume. After semiotic classification of all atlases (Wolodtschenko 2007) this atlas index volume is a text-related one.

The meta-variable model (as triaxial model) shows a correlation of semiotic information in diagram form: Text-90%, Karte-5%, Bild-5% (in German terms).

3. Atlas Indexes

Generic terms and proper names (entries)

Basic block			
I	II	III	IV
Regional Index, Index of Maps	Systematic Index (of Titles of Articles, Maps and Illustrations)	Alphabetic Index	List of Authors
15pp.=12,5%	61pp.=50,8%	35pp.=29,2%	3pp.=2.5%
Generic terms and Proper names	Generic terms and Proper names	Generic terms and Proper names	Proper names

Toponymy

Toponymy/
Anthroponymy

Toponymy/
Anthroponymy

Anthroponymy

3.1. Regional Index

Regional Index (Author: Großer,K.)	
Index maps	Regional Index
Vol. I, IV, VI, VII, XII Vol. II, III Volume V Vol. VII, IX, X, XI Maps of states	List of Landscaps List of Landscaps (with maps) List of historical maps of Deutschland bevor 1949, Bundesrepublik Deutschland befor 1989 and DDR untill 1989 List of Europe and World maps: -List of European Union maps - List of Europe maps - List of World maps
35%	65%
100%=14 Seiten	
S.7-21	

Regional index (block I) of index content (Wolodtschenko 2008)

3.2. Systematic index

Basic block			
I	II	III	IV
Regional Index, Index of Maps	Systematic Index (of Titles of Articles, Maps and Illustrations)	Alphabetic Index	List of Authors
15pp.=12,5%	61pp.=50,8%	35pp.=29,2%	3pp.=2.5%
Generic terms and Proper names	Generic terms and Proper names	Generic terms and Proper names	Proper names

Systematic index (block II) is a main one with 50,8% of index content

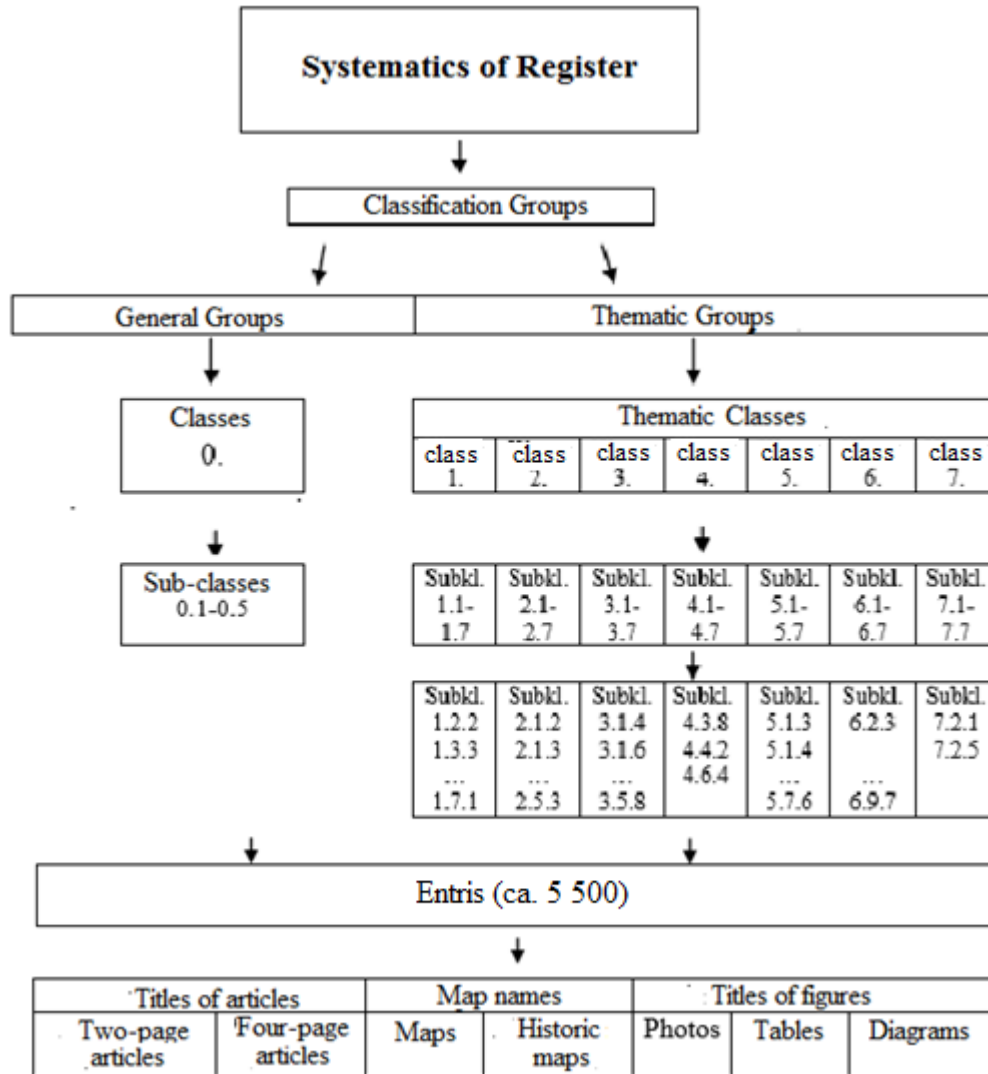
3.2. Systematic Index Structural Model

The 12 thematic volumes provide around 5500 elements/characteristics (articles, maps and illustrations) for the systematic subject index (Nationalatlas... 2007). The structure of the systematics is an interesting example of the ontological systematization or classification of the atlas contents in the subject index.

Systematisches Sachregister (Autoren: Kacirek,A., Tzschaschel, S.)	
Aufbau der Systematik	Liste von Namen der Beiträge, Karten und Abbildungen
S.22-26	S.26-82
4 S.=5,5%	57 S.=94,5%
100%	

3. 2. Systematic Index

Structural-classification model (after Wolodtschenko 2007)



3.2. Systematic Index

Thematic classification

General group	Thematic classification groups						
0.	1.	2.	3.	4.	5.	6.	7.
Methodics, Theory	Natural lands, Environment	Population, Social policy	Culture, Society	History, Administration, Politics	Economy, Labour	Settlement, Dwelling, Traffic	Territory planing, Environmental problems, Landscape protection

The table (after Wolodtschenko 2007) shows eight numerically ordered thematic group/ areas, which can be divided into methodological-theoretical (0) and thematic (1-7) ones.

3.2. Systematic Index

Entries construction

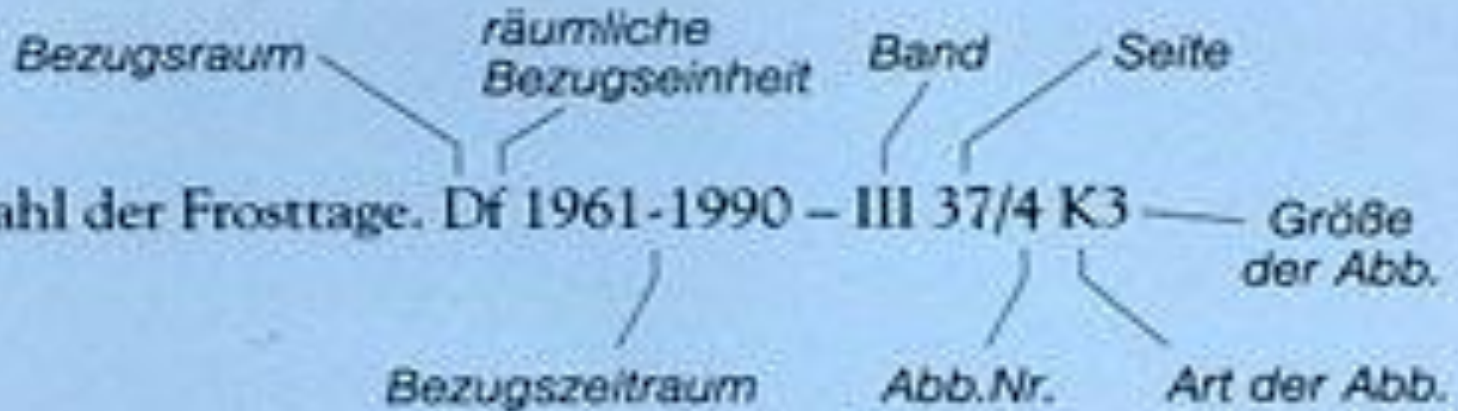
Germany

Data unit

Volume

Page

Map format



Titel

Time

No.

Kind of map

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Each of around 5500 elements (articles, maps and illustrations) is characterized with 9 positions: 1) title; 2) reference space; 3) space unit, only for German maps; 4) reference period/year; 5) volume number; 6) pages; 7) figure number; 8) type of place of discovery; 9) format/width/and scale (for maps).

3.3. Alphabetic Index

Structural model

Alphabetic Index (Authors: Graenitz, F., Haensgen, D.)	
Common nouns (generic terms) Gattungsnamen	Proper names (specific names) Eigennamen bzw. Personennamen
6621	48
99,3%	0,7%
83-117pp. = 35 p.	
100%	

The alphabetical subject index presents a collection of special terms (generic names) and personal names (proper nouns, which are highlighted in the subject index with small capitals) from the individual subject indexes of the twelve subject volumes. The subject index (35 pages) as an alphabetical list of terms contains 6669 generic names of 25 letters, of which 48 proper nouns (personal names) or 0,7% of all generic names .

3.3. Alphabetic Index

Alphabetische Zuordnung von Begriffen von A bis Z (6621)																									
a)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	462	534	61	217	365	412	365	275	202	39	463	251	334	168	113	258	16	300	754	261	158	202	351	3	105
Alphabetische Zuordnung von Eigennamen bzw. Personennamen (48)																									
b)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Z
	2	2	3	3	1	1	-	6	-	-	2	5	1	2	1	3	-	3	5	4	-	2	1	-	1
Numerische Zuordnung von 3 bis 754 Begriffen																									
c)	3	16	39	61	105	113	158	168	202	202	217	251	258	261	275	300	334	351	365	365	412	462	463	534	754
	X	Q	J	C	Z	O	U	N	I	V	D	L	P	T	H	R	M	W	E	G	F	A	K	B	S

The table shows an analysis model of

- a) Alphabetical assignment of terms from A to Z (6621) of the alphabetical subject index (Wolodtschenko 2008);
- b) Alphabetical assignment of proper names or personal names (48) and
- c) Numerical assignment of 3 to 754 terms.

3.4. List of Authors

With three pages (118-120 pp.), the index of authors is a simple index that contains only the names (with first names) of authors, co-authors, co-editors and editors and indicates which volumes they contributed to. Volumes are indicated with Roman numerals and Arabic numerals in brackets indicate the number of written articles.



The index of authors contains 596 proper names (594 personal names and two institutional names: Office for Military Geowesen and DeTeMobil). The male/female ratio among authors is approximately 4:1 or 76.6% and 23.4%.

Two tables show an alphabetical-numerical assignment of author names (after Wolodtschehnko 2008).

Alphabetic order of authors names (A bis Z)																							
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Z
19	55	3	13	9	28	37	54	1	18	51	28	47	12	4	22	1	22	95	8	6	10	38	9
Numeric order of authors names (1- 95)																							
1	I	3	4	6	8	9	9	10	12	13	18	19	22	22	28	28	37	38	47	51	54	55	95
I	Q	C	O	U	T	E	Z	V	N	D	J	A	P	R	F	L	G	W	M	K	H	B	S

3.4. List of Authors

Structural-statistic model

Seitenangabe	Anzahl von Autoren				
	Insgesamt	BRD	Ausland	Personen	Kollektive
S.118-120	596	580	16	594	2
3S.=2.5%	100%	97,3%	2,7%	99,7%	0,3%
				76,6%/23,4%	
Anzahl von Autoren					
BRD	Bundesländer				
	Bayern	NRW	Baden-Württemberg	Hessen	Andere
580	115	92	58	47	268
100%	19,8%	15,7%	10,0%	8,3%	46,2%
Anzahl von Autoren					
BRD	Städte				
	Berlin	München	Leipzig	Andere	
580	58	50	38	334	
100%	10,0%	8,6%	6,6%	74,8%	
Anzahl von Autoren (ohne Berlin)					
BRD (ohne Berlin)	Altbundesländer		Neue Bundesländer		
		434		104	
538					
100%		80,7%		19,3%	

Based on the index of authors' names and twelve table of contents (volumes 1-12), an analysis of the authors' affiliation to federal states and municipalities was carried out. The model contains the information that 97% of the authors are from Germany and 99.7% are individuals. Information based on author names about scientific activities in federal states and cities is particularly interesting (Wolodtschenko 2007).

4. Conclusion

Each atlas (analogue or digital, map containing, illustrative or textual) includes thematically related information. The analyzed atlas-index volume of NAD contains 90% of textual information about 12 thematic volumes and belongs to text atlases.

The atlas-index volume of NAD itself became an example for his own semiotic analysis and research within the framework of a new discipline, atlas semiotics. Based on the analysis of the atlas-index volume and the monograph “Nationalatlas Deutschland. Ein kartosemiotisches Porträt“ (Wolodtschenko 2007), a new derivative photoatlas or meta-atlas was created. The atlas-semiotic Theme-Module (T-M)-method was used to analyze the register.

The created photoatlas can be considered as a methodical, derivative meta-atlas.

This photoatlas presents the information obtained from 12 thematic volumes in register form (with four indexes for navigation and search of thematic-reference information) as well as about the semiotic register construction as a new integrated knowledge store.

5. References and Imprint

Slides 14, 22: From Nationalatlas Bundesrepublik Deutschland. Register (2007).

References

Nationalatlas Bundesrepublik Deutschland. Register. Eds. Hänsgen, D., Tzschaschel, S. Elsevier, München 2007.

Wolodtschenko, A.(2007). Nationalatlas Deutschland. Ein kartosemiotisches Porträt. Verlag TU Dresden. Dresden 2007.

Wolodtschenko, A.(2008): Atlasregister: Struktur, Systematik und Namensammlung (am Beispiel des Nationalatlas Bundesrepublik Deutschland). In: Proc. of the 23rd Intern. Congress of Onomastic Sciences. York University, Toronto 2008. 1-6 pp (cd-version).

Alexander Wolodtschenko

Semiotic Analysis of Atlas Index (On example of National Atlas of Germany)

Meta-Photoatlas

Dresden 2022