DFG Schwerpunktprogramm
MEDIATISIERTE WELTEN

Fachgebiet
Audiokommunikation

A critical realist approach to mediatization research

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25min. presentation at “Mediatization and New Media”
International research workshop by ECREA TWG Mediatization
University of Copenhagen, Denmark
March 15-16, 2013

I.
A COMPLEXITY CHALLENGE

Digitization and Mediatization: A complexity challenge

Growing research challenges with "media of the 3rd degree" (Jensen 2010)

- Devices are increasingly mobile und ubiquitous
- Devices are increasingly multifunctional
- Content is increasingly interoperable, omnipresent, interactive
- Technologies may be combined sequentially or concurrently

People develop complex intertwined and situated media practices

- Some are short-termed, some more long-termed
- Some are performed once, some seldom, some repeatedly
- Some are theme-specific, some are generalized
- Some are unique to single actors, others are widely shared patterns

How do we deal appropriately with that *complexity* in empirical inquiry?

“Survey Music and Media”: Background and Aims

- DFG-Research project

  “Survey Music & Media – Empirical Basic Data and Theoretical Modeling of the Mediatization of Everyday Music Reception in Germany”

Dr. Steffen Lepa

Prof. Stefan Weinzierl

Anne-Kathrin Hoklas

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Prof. Alexander Geimer

- Project is part of the Bremen-based DFG-Priority Program “Mediatized Worlds” (2010-2016)

Meta-theoretical background

- Theory of ***Generational Media Practice Cultures*** (Schäffer 1998, 2009)

- **Praxeological, habitus-theoretical approach to Medium & Mediatization Theory** based on the sociology of knowledge of Karl Mannheim (1893-1947)
  - Changing media environments form *cohort-, gender- and milieu-specific, conjunctive experiential spaces* alongside ontogenesis (→ "determination in the first instance")
  - Enculturation during "formative years" promotes shared forms of habitual practice, *media generations* that are only loosely coupled to birth cohorts (→"layering of experience")

- **Development of this type of generational units exhibits typical habitus properties**
  - Growing inertia across lifespan
  - Changing attributions of meaning
  - Long term changes in membership and morphology → subject of mediatization research

- ***Project Proposal:***
  Empirical Reconstruction of the *mediatization of everyday music listening in Germany* by inspecting existing *music media generations* on three layers of abstraction:
  - **Media Repertoires** – Societal Level (emerging usage patterns / trajectories)
  - **Media Dispositifs** – Milieu/Lifestyle Level (shared forms of situated action)
  - **Media Affordances** – Psychobiological Level (mechanisms of embodied mediation)

Reliance on “qualitative” case based research: Neglect of “the big picture”

- **Two dimension of complexity regarding media use:**
  - complexity within cases
  - complexity between cases

- **Qualitative studies employ “human interpreters”:**
  - rather good in confronting “complexity within” (narratives & actions)
  - rather bad in reducing “complexity between” (patterns and trajectories)

- **How to get from *mediation* phenomena to *mediatization* perspective & vice versa?**

- *„It matters whether the discourse whose presence we identify during a focusgroup interview is widespread within the culture (or subculture). It is important for us to know, roughly, the number of people who construct one reading of a TV programme rather than another. And while there are many ways to measure ideological resonance, it seems churlish to persistently ignore those research models that might be well equipped to do so.“* (Lewis, 1997: 87)

- **This is also true for mediatization phenomena!**

The received view on the employment of quantitative methods in media research

QUAN-Approaches (numbers, probabilities, statistics) are said to imply..

- questionable assumptions on the structure of data or reality (add./lin./distr.)
- a certain form of deductive hypothesis testing procedure
- a commitment to a positivist epistemology
- a subordination of qualitative approaches
- an abstraction of the „case-structure“ in favour of „variance-explanation“

None of these claims is true,
when adopting a *critical realist* approach to mediatization research!

"What distinguishes realism from positivism is not mat they run regressions and we do not but how we run regressions and the significance we attach to them” (Porpora 1998)

II.
A CRITICAL REALIST PROPOSAL

Basic tenets of “Critical Realism”

- **Philosophy of social science** that loosely appeals to the writings of Roy Bhaskar (1975, 1979) and aims to promote a “3rd way” of conducting social inquiry
  - Ontological Realism (“the empirical, the actual, and the real”)
  - Epistemological Relativism (“discourse glasses, but never completely”)
  - Methodological Pragmatism (“viable results are preliminary truths open to scepticism”)
  - Special focus on matters of causality (Pratschke 2003, Maxwell 2008)

- **Heuristics for CR social research** (Danermark et al. 2001, Maxwell 2012):
  - Establish causality claims through *retroductive inference*
  - Make explicit *a-priori assumptions* that necessarily guide empirical observations
  - Combine *closed system* experiments with systematic observations of *open systems*
  - Combine „*extensive*“ with „*intensive*“ observational approaches

Growing consensus regarding causality in methodological discourse

- Nancy Cartwright: "*Causality is back, and with a vengeance*" (2007)

- **Convergent *realist* views on causality in both "camps" (Tacqu 2010):**
  - Is to be measured as **casewise effects of actions**
    not by calculating **multiple covariances** between variables
  - May stem from **non-additive and non-linear effects** and **multiple contradictory paths**
  - Has to fulfill **INUS-Cond.** (*"insuffient, but necessary part of an unnecessary but sufficient condition"*)
  - May only be **directly observed in closed systems** or quasi-closed systems
  - May be inferred from ex-post-facto designs by **counterfactual reasoning** & **th. assumptions**
  - Infererence always **dependent on amount of available valid and relevant information**
  - Detection/explanation stay **probabilistic**, **inductive** and therefore **collective** enterprises

Proposal of a critical realist approach to present challenges in mediatization research

- *"Faced with information overload, we have no alternative but pattern recognition."* (Marshall McLuhan)

- **Theoretical aim:**
  Researching Mediatization by empirically *identifying the causal processes (1)* and *describing the causal mechanisms (2)* that produce large-scale and long-term change in widely shared habitual patterns of media use

- **Basic idea in the face of complexity:**
  Combine *extensive data mining procedures* that detect causal phenomena with *intensive interpretive qualitative follow-up studies* ("best of both worlds-principle")

- **Main challenge:**
  Modeling *fuzziness* of everyday situated engagement with media appropriately on *different layers of complexity* while still allowing *emerging vertical causality*

A critical realist notion of causal inquiry

- **Basic Approach: Conceive of QUAN causal analysis as "large-scale case studies"**
  - Explanation of *the „lifecycle" of complex social phenomena* („cases" under inspection)
  - *„Cases" aren't „natural kinds",* have to be empirically discovered as "similar types of higher order phenomena composed from lower order parts with common fate"
  - *„Cases" are meaningful, enduring and complex sets of structures & agency*

- **Task I: Identification & description of causal processes („meaningful events")**
  - **Type I: *emergence*** of a higher-order case structure
  - **Type II: *decline*** of a higher-order case structure
  - **Type III: *passages*** of membership between case structures
  - **Type IV: *transitions*** in case structure morphologies

- **Task II: Retrodiction and interpretation of producing causal conditions / actions**
  - **Composition** of preceding material & symbolical structures ("conditions")
  - **Meaning/Style** of agency that actualizes mechanisms ("actions")
  - **Sufficient, Necessary, and Contingent character** of conditions / actions?

III.
ADOPTION TO THREE META-THEORETICAL CONCEPTS

1. Media Repertoires: Macro Level
A critical realist re-interpretation

- **Original Interpretation (Hasebrink & Popp 2006, Hasebrink & Dohmeyer 2012):**
  - Habitual *fuzzy* patterns of (trans-)media use regarding different technologies
  - Detectable by analysis of large scale (representative) data sets (compl. with QUAL studies)
    - Self-administered questionaire data (validity / economical challenge)
    - Actual user data in form of complex time series / log files (ethical / complexity challenge)

- **Critical Realist Interpretation:**
  - *Homogenous & meaningful* patterns as "causal outcome" to be detected and explained
  - Conceiving of patterns as lifeworld-issue related "habitual forms" in the narrower sense
  - Adjust *scope* and *grain size* of measurement / sampling according to research question

- **Tenets of "quantitative" Critical Realist Media Repertoire Analysis:**
  - Choose degree of scope, grain size and assumptions to establish *middle-range-theories*
  - Identify *sufficient* conditions for repertoire emergence, decline, passages, and transitions
  - Interpret repertoires as outcomes of *collective enculturation in shared media dispositifs*

2. Media Dispositifs: Meso Level
A critical realist re-interpretation

- **Original Interpretation (Baudry 1974, Hickethier 1995):**
  - Widespread *typical arrangements* of social frames, media technologies, symbolical content, related discourse and embodied practices
  - Expected to produce a stable form of (hegemonial) social order, *subordinating the subject to become a "medium effect"* through power of the "apparatus"

    → *Strong and unidirectional notion of "medium effects"*

- **Critical Realist interpretation (Zajc 1999, Lepa 2013):**
  - Common *situated ritualized practices* for the *habitual enactment* of *media affordances*
  - Subjects are expected to *subordinate themselves to become a "medium effect"*, in order to *realize media affordances instrumentally* or through *acquired generational habitus*
  - Actual ordering powers and mechanisms not theoretically purported, but retroductively analyzed by help of GT, Documentary Method and QCA

    → *Probabilistic-emancipatory notion of "medium effects"*

- **Tenets of Critical Realist Media Dispositif Analysis (Lepa & Geimer 2011):**
  - Develop *formal description* of locally *perceived* and *realized* affordances
  - Describe *necessary* and *sufficient conditions and actions* that lead to realization
  - Deliver *action-oriented explanations* for the emergence of identified *media repertoires*
  - Interprete results as *causal explanations* for the inner logics of *media generations*

3. Media Affordances: Micro Level
A critical realist re-interpretation

- **Original Interpretation (Gibson 1979, Norman 1999):**
  - Action-Potentials embodied/enabled by the material form of artifacts
  - *Hidden but real causal powers* for agents with correct "endowment"
  - Have to be initially perceived ("direct specification" or "cultural conventions")
  - Have to be realized through practical agential enactment
  - Emerging interactional superstructures similar to "actor-networks"

- **Critical Realist Interpretation:**
  - No need for, originally a realist conception in terms of medias' causal powers:
    - From a positivist perspective, only *empirically observable* powers are "significant"
    - From a constructionist perspective, only powers *actually perceived by actors* are "significant"
    - From a realist perspective, powers *(preliminary) proven to be really existent* are "significant"
  - researched through ethnographic studies and laboratory experiments

- **Tenets of Critical Realist Media Affordance Analysis (Lepa 2013):**
  - Dispositif analyses or ethnography help to identify perceived and *possibly real* affordances
  - Conduct closed-system experiments in order to falsify purported affordance mechanisms

Conclusion

- A **proposal** for new combinations of empirical procedures aiming at empirical reconstruction of large scale / long term mediatization processes
- A **plea** for increased integration of social research methods from different methodological „camps“ (aka „mixed methods“)
- An **argument** to increase reflection on research methods‘ foundation in developments within the philosophy of social science
- A **suggestion** regarding how to plausibly justify causality claims in mediatization research

Thank you for your patience!

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IV.
AN INSIGHT INTO RESEARCH PRACTICE

Media Repertoire Analysis: Identification of Large Scale Mediatization Processes

- **Type I + II Events: Emergence / Decline of Media Repertoires**
  - *Methods:* Latent Class Analysis, Latent Profile Analysis, Multinomial Regression, QCA
  - *Data:* cross-sectional behavioral data about habitual media use

  → ***"Survey Music and Media 2012": Emergence of nowadays audio media repertoires in Germany***

- **Type III + IV Events: Passages / Transitions regarding Media Repertoires**
  - *Methods:* Latent Transition Analysis, Latent Growth Models, Multinomial Regression, QCA
  - *Data:* longitudinal behavioral data about habitual media use

  → ***"Survey Music and Media 2015": Passages regarding nowadays audio media repertoires in Germany***

- ***Employable Data Mining Procedures always exhibit a trade-off between underlying assumptions/premises and ease of interpretability/realization/calculus!***

- ***Fuzzy/probabilistic indicator and class membership scales preferred from a CR perspective!***

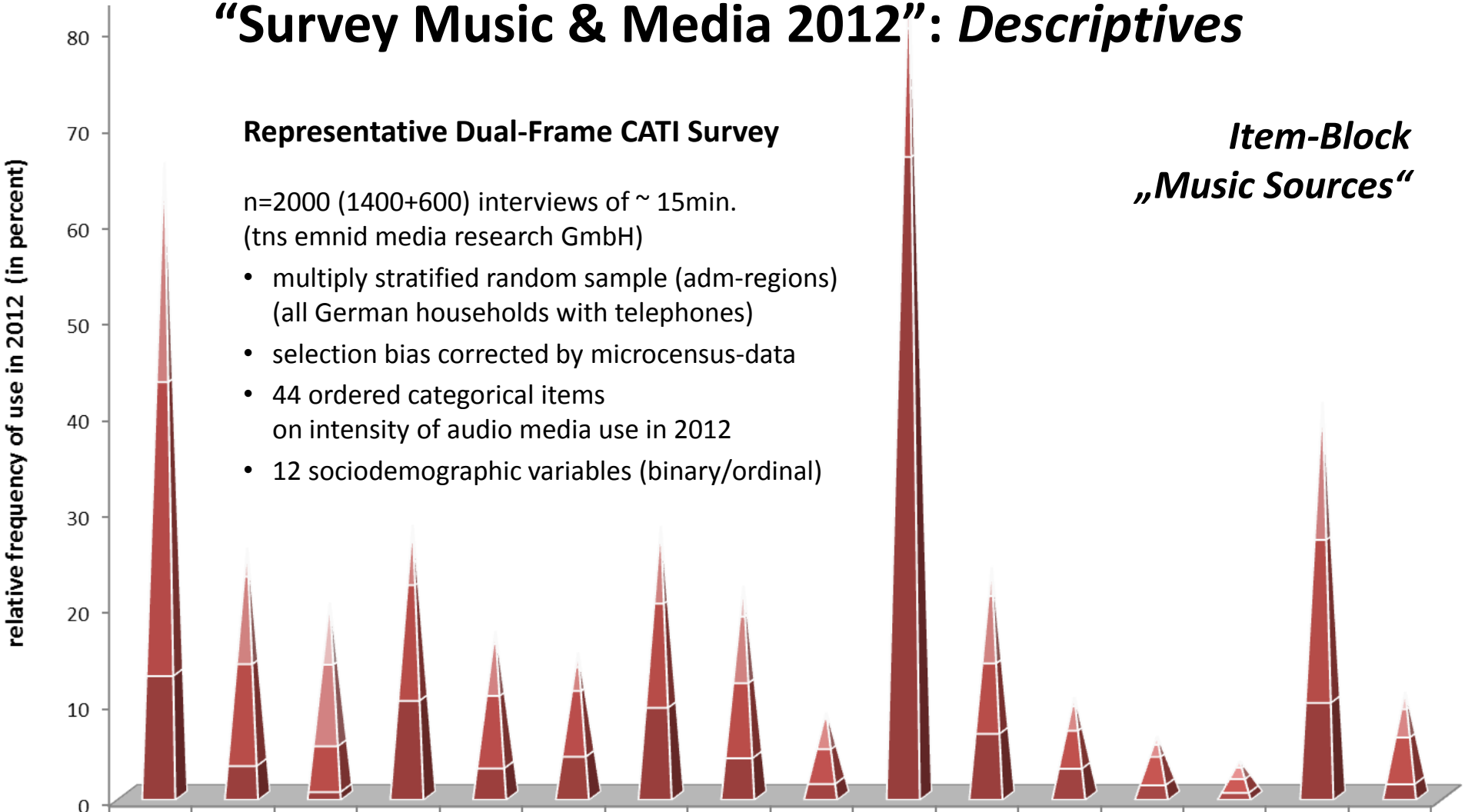
Media Repertoire Analysis I [Detection]: “Survey Music & Media 2012”: *Descriptives*

Representative Dual-Frame CATI Survey

n=2000 (1400+600) interviews of ~ 15min.
(tns emnid media research GmbH)

- multiply stratified random sample (adm-regions) (all German households with telephones)
- selection bias corrected by microcensus-data
- 44 ordered categorical items on intensity of audio media use in 2012
- 12 sociodemographic variables (binary/ordinal)

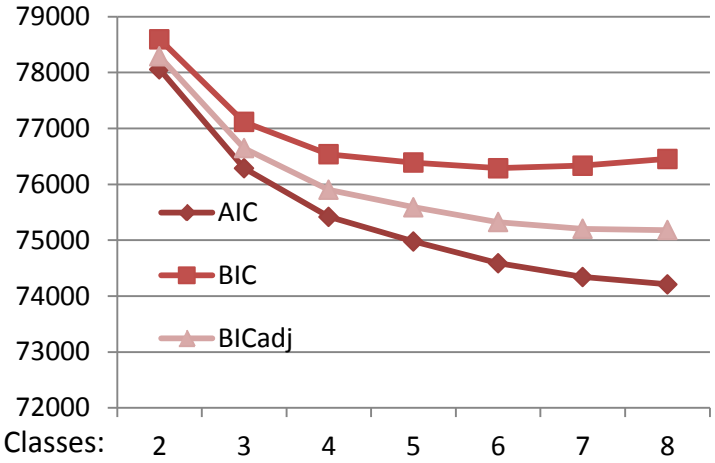
Item-Block „Music Sources“



	CD (original)	CD (burnt)	Vinyl Record	Internal Memory	External Hard Drive	Fileserver at home	Memory Stick	Cassette Audiotape	DAT MiniDisc	Analog Radio	Internet Radio	Music Cloud	Stream./DL Provider	Personal Web Radio	YouTube et al.	Websites and Blogs
min. 1x year	4.35	2.96	6.37	1.31	1.32	1.52	1.70	3.16	0.66	2.20	2.96	0.93	0.84	0.62	3.03	1.75
min. 1x month	18.38	8.95	8.29	4.89	5.28	2.40	6.25	6.78	2.99	4.08	6.88	2.44	1.17	1.05	11.19	2.82
min. 1x week	30.36	10.42	4.68	11.83	7.34	6.64	10.66	7.67	3.43	13.27	7.18	3.78	2.76	1.28	16.77	4.67
min. 1x day	12.80	3.46	0.79	10.16	3.21	4.36	9.43	4.24	1.58	66.52	6.76	3.13	1.43	0.66	9.99	1.57

Media Repertoire Analysis I [Detection]: "Survey Music & Media 2012": *Latent Class Analysis*

Classes	Starts	Initial Iterations	Optimizations	Time	Processors	3 Replications	Boundaries	Entropy	AIC	BIC	BIC_{adj}
1	5000	35	500	00:01:08	2	yes	0	-	138659.953	138984.806	138800.537
2	5000	35	500	00:07:54	2	yes	0	**0.927**	78056.535	78594.221	78289.224
3	5000	35	500	00:24:13	2	yes	0	0.879	76287.109	77116.043	76645.839
4	5000	35	500	00:38:02	2	yes	0	0.862	75417.569	76537.749	75902.338
5	5000	35	500	00:57:40	2	yes	0	0.841	74978.426	76389.854	75589.236
6	50000	500	5000	15:11:55	2	yes	0	0.862	74587.003	**76289.677**	75323.853
7	100000	1000	10000	21:01:42	4	yes	0	0.867	74340.549	76334.470	75203.439
8	100000	1000	10000	47:45:52	4	yes	0	0.866	**74209.059**	76455.020	**75181.022**

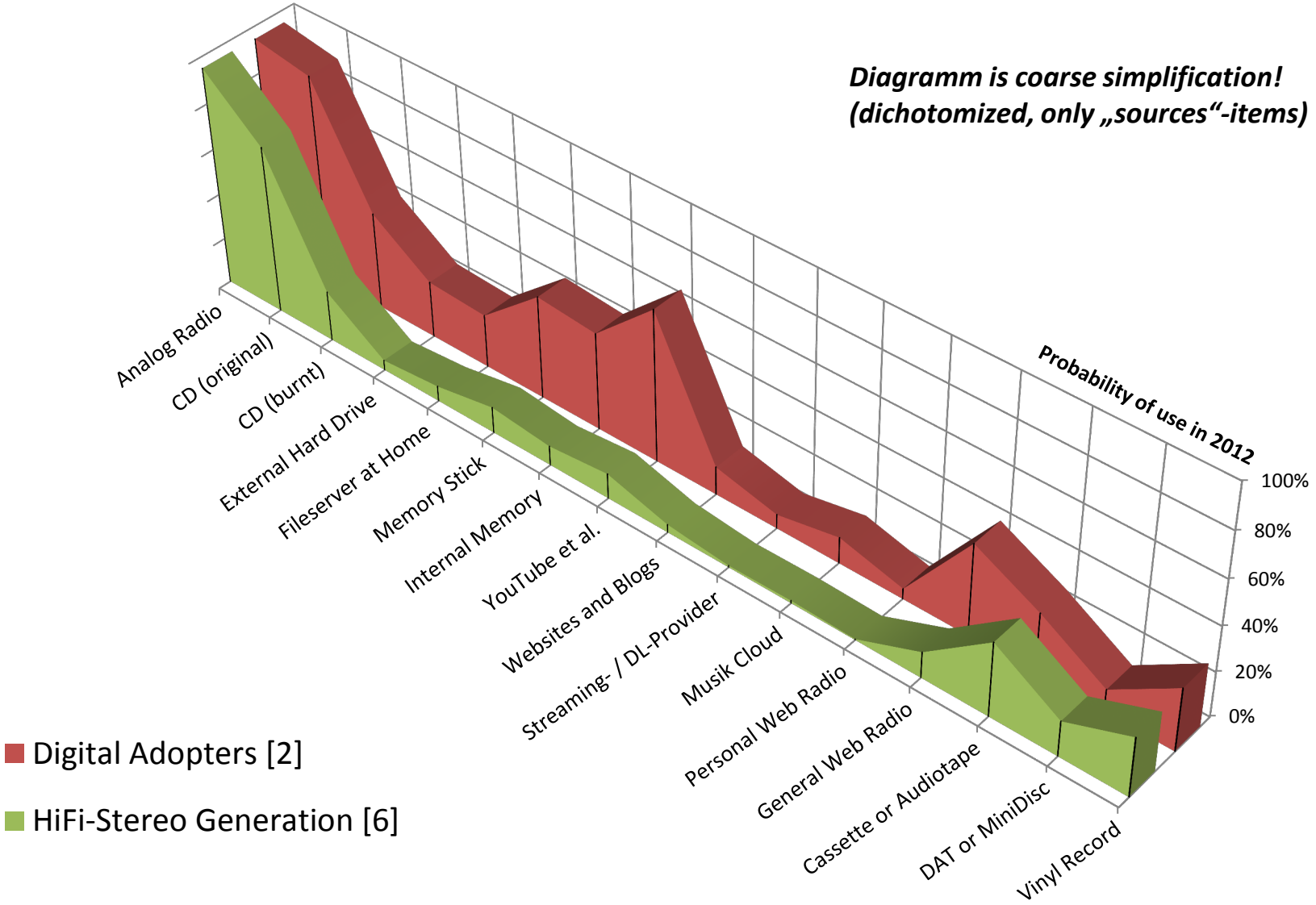


44 fuzzy indicators and 7 passive covariates

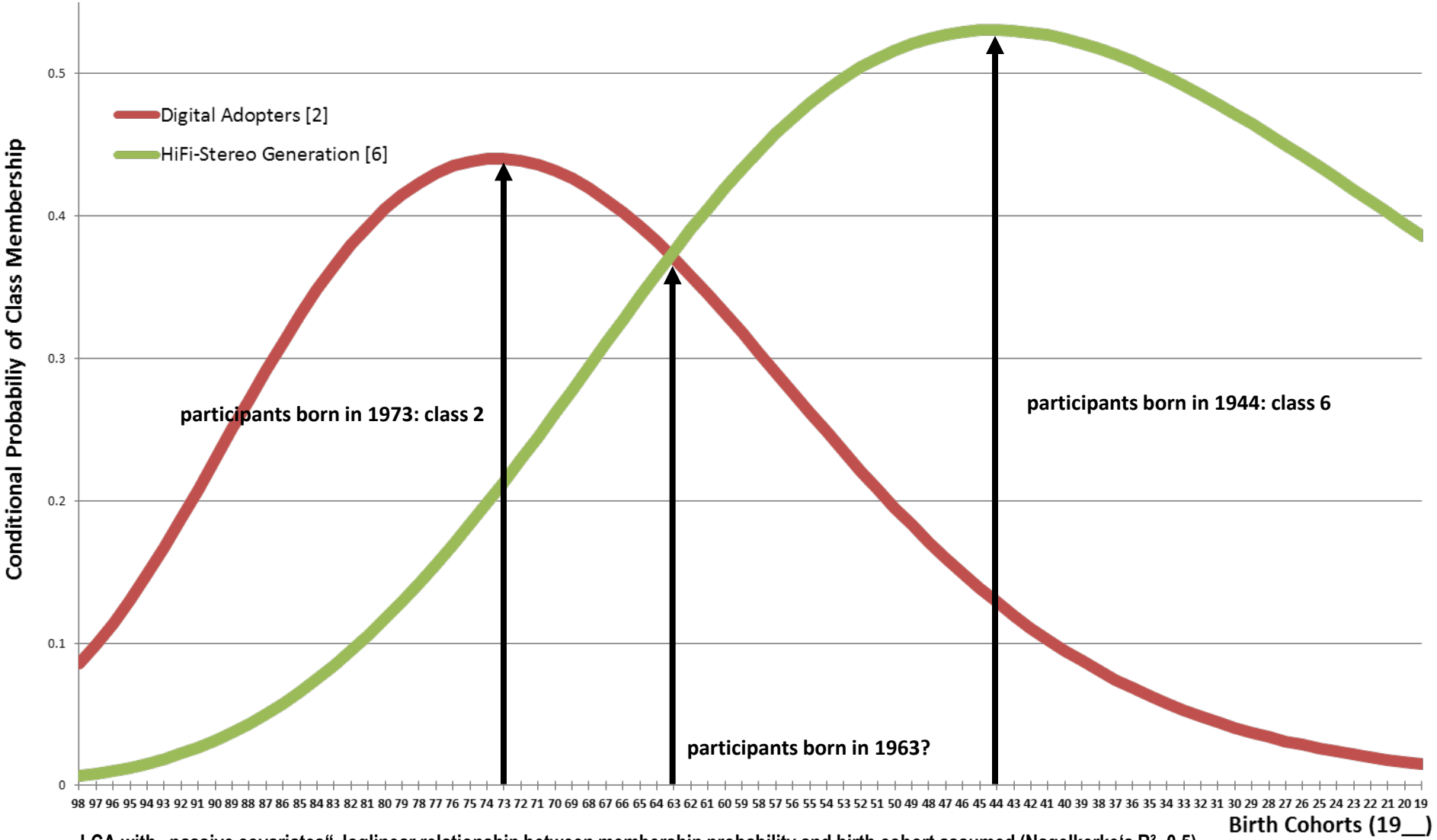
average latent class probabilities by potential class membership

	Class 1 (10 %)	Class 2 (21%)	Class 3 (7 %)	Class 4 (10%)	Class 5 (23 %)	Class 6 (29 %)
P(class=1)	***0.887***	0.072	0.001	0.041	0.000	0.000
P(class=2)	0.030	***0.875***	0.017	0.028	0.000	0.051
P(class=3)	0.000	0.036	***0.909***	0.028	0.009	0.018
P(class=4)	0.032	0.060	0.018	***0.891***	0.000	0.000
P(class=5)	0.000	0.000	0.006	0.000	***0.925***	0.069
P(class=6)	0.000	0.040	0.006	0.000	0.042	***0.913***

Media Repertoire Analysis I [Detection]: "Survey Music & Media 2012": *Latent Class Profiles*



Media Repertoire Analysis II [Retrodiction]: "Survey Music & Media 2012": *Birth Cohort Analysis*



LCA with „passive covariates", loglinear relationship between membership probability and birth cohort assumed (Nagelkerke's R^2~0,5)

Media Repertoire Analysis II [Retrodiction]: "Survey Music & Media 2012": *Regression Analysis*

Multinomial Logistic Regression (n=2000, person weights) Class 2 vs. Class 6 [red.] (Nagelkerkes R^2=0.57)					
	estimation	**se**	**est./se**	**odd ratio**	**p**
cohort	-0.074	0.018	-4.081	0.929	0.000
sex (f)	-0.040	0.323	-0.123	0.961	0.902
education	**0.300**	**0.093**	**3.220**	**1.350**	**0.001**
income	0.040	0.162	0.248	1.041	0.804
children@home	-0.146	0.162	-0.904	0.864	0.366
migrant	0.051	0.185	0.274	1.052	0.784
urbanity	0.140	0.085	1.655	1.150	0.098

Heuristics for identifying informants for media dispositif study:
→ compare „lower-educated" class 2 members from „younger cohorts"
with „higher educated" class 2 members from „younger cohorts"
& vice versa & crosswise?

Good translation to case-based approaches? (real persons are not „ceteris paribus"!)

Media Repertoire Analysis II [Retrodiction]: "Survey Music & Media 2012": *QCA Analysis*

- **Alternative approach:**
  Fuzzy-Set Qualitative Comparative Analysis (Ragin 2000) of „borderline conditions"

Fuzzy Truth Table for "HiFi-Stereo Generation" [class 6] vs. "Digital Adopters" [class 2] (both birth cohort 1963)

sex(f)	migrant	child@home	edu_fuzzy	income_fuzzy	urbanity_fuzzy	no. of cases	outcome	consistency
0	0	1	0	0	0	1	class 6	1
0	0	0	0	0	0	1	~	0.855072
0	0	0	1	0	0	1	~	0.810811
0	0	0	0	0	1	1	~	0.769231
1	0	0	0	1	0	1	~	0.608247
1	0	0	1	1	1	3	~	0.568493
0	0	0	1	1	0	3	~	0.528302
1	0	0	1	0	1	3	~	0.520833
1	0	0	1	0	0	2	~	0.444444
0	0	0	1	1	1	4	~	0.385093
0	1	0	1	1	0	1	class 2	0
1	0	1	1	1	1	2	class 2	0

Fuzzy-Set QCA for Class 6 and Class 2, birth cohort 1963

causally sufficient conditions:	consistency	coverage	case coverage
Class 6 = f (male & low_income)	0.682	0.273	6
Class 2 = f (migr. | female & child@home)	1.000	0.250	6

Quine-McClusky Algorithm (True 1-L, 13 Rows, 23 cases, consistency cut-off 0.7)

Heuristics for identifying ‚extreme cases' as informants:

→ Check for respective informants <=1963

→ Check for respective informants >=1963