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Towards an Integration of Quantitative and Qualitative Content Analysis in Propaganda Research

1. Reconstruction of socio-psychological context as a methodological framework

Within the framework of recent studies on U.S. propaganda and psychological warfare during the Contra War in Nicaragua (Kempf, 1990), a communication model was developed according to which it is not so much the facts that count for persuasion and propaganda but more the meaning that they are given. In order to manipulate that meaning, persuasion and propaganda make use of the *command* and *parade* aspects of communication which determine the recipient's horizon of consciousness.

According to this model, the meaning of a message results from the context in which it is placed. This context is determined by three aspects of the communication:

1. The *report aspect* conveys information and is, therefore, synonymous with the (propositional) content of the communication.
2. The *command aspect* refers to what sort of message it is to be taken as (Watzlawick et al., 1967) and includes
 - information about the senders of messages themselves (the "self-manifestation" aspect according to Schulz von Thun, 1981) as well as
 - information about the relationship between the communicators (the "relationship" aspect)
3. The *parade aspect*, finally, imposes behavior on the recipient and provokes his or her response.

As Kracauer (1952, p.642) points out, "most communications are not so much fixed entities as ambivalent challenges." They challenge the audience "to absorb them and react to them."

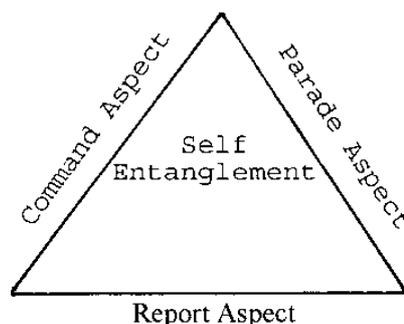


Figure 1: Communicator's entanglement in the topic of a communication.

Due to its command and parade aspects, any communication produces an interactive dynamic by which the communicators themselves get entangled - not only in an interaction with each other but in the very (propositional) topic of the communication as well (cf. Figure 1). The propositional content of the communication becomes a medium, in which the communicators give a psychodramatic expression to their self-comprehension as a subject. While they debate

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some topic (as the manifest content of their communication) they simultaneously negotiate their own identity (as its latent content). By doing so the latent content determines the point of view from which the manifest topic is perceived, thus interpreting the meaning of its propositional content and excluding other interpretations (and even facts) from the communicators' horizon.

In our propaganda studies this model originally served as a rationale for qualitative content analysis which - whereas most qualitative studies do (cf. Berelson, 1952, p.122) - did not so much focus on the mere content of a communication but more on its underlying intentions and its presumable effects on the audience.

For this purpose an analysis scheme was developed which is closely related to the text-interpretative method by Volmerg (1980) and resulted from the attempt to release that method of its psychoanalytic mystifications.

In contrast to Volmerg (1980), it is assumed that unawareness of certain aspects of a topic is *not* in the first instance *produced* by psychological defense mechanisms but primarily results from the subjects' entanglement, which determines their point of view. Since this selective unawareness is the basis on which the subjects cope with the topic, it cannot be changed arbitrarily, however, but will be *maintained* by psychological defense mechanisms, if necessary (cf. Kempf, 1991).

If, for example, the parties in a conflict have contrary interpretations of each other's actions, this is primarily due to the divergence of their perspectives. While one experiences one's own actions from the *inner perspective* of looking at one's intentions, other persons' actions are experienced from the *outer perspective* of looking at their consequences. Mutual understanding of each other's actions therefore requires an active process of role taking.

If a subject sticks to his or her own perspective, however, the opponent simply appears as an aggressor. This subjective point of view then implies both the necessity and the justification of coping with the situation by defending oneself against the aggression.

The more the subjects get involved in such aggressive interaction, finally, the more they get tied to this perspective which leaves no space for empathy towards the other and which must not leave such space, since it would otherwise jeopardize the basis on which they (believe to) have control of the situation.

In order to analyse how the perspective of the audience is manipulated by a communication, three levels of understanding have to be considered. Each of these levels is defined by some characteristic questions from which the socio-psychological context can be reconstructed, into which a message is placed (cf. Figure 2).

1. The level of *logical understanding* deals with the communication as conveyance of information, and analyses its report aspect by asking such questions as:

- "What information is given?", including:

- "What is the topic of the communication?" and

- "What is the content of the message?"

and - as a step of depth-analysis:

- "What does the sender of a message actually intend to communicate to the recipient?"

2. The level of *psycho-logical understanding* deals with the communication as an interaction process, and analyses its command and parade aspects by asking such questions as:

- "How is the information presented?", including:

- "How do the communicators refer to each other?" and

- "What response is provoked by this?"

and - as a step of depth-analysis:

- "What kind of psychodrama is the latent content of this interaction?".

3. The level of *socio-logical understanding* finally deals with the communication as an instance of defense against information and analyses those aspects of a topic which are excluded from the horizon of consciousness:

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- "What information is excluded or distorted by the communication?"

Analysing the secondary rewards, which the communicators gain from defense against this information might finally give a deeper understanding of:

- "Why (if present) psychological defense mechanisms are mobilized against bringing this information into the core of consciousness".

Level of understanding	Analysed aspects of the communication and its topic	Characteristic questions	Focus of analysis
Logical understanding	Report aspect of the communication The communication as conveyance of information	»What information is given?» - »What is the topic of the communication?» - »What is the content of the message?»	Manifest content of the communication
		»What does the sender of the message actually intend to communicate to the recipient?»	Interactive dynamics
Psycho-logical understanding	Command and parade aspect of the communication The communication as an interaction process	»How is the information presented?» - »How do the communicators refer to each other?» - »What response is provoked by this?»	Latent content of the communication
		»What kind of psychodrama is put into scene?»	
Socio-logical understanding	Aspects of the topic which are excluded or distorted by the communication The communication as defence against information	»What information is excluded or distorted by the communication?» »Why are psychological defense mechanisms mobilized against bringing this information into the core of consciousness?»	Excluded or distorted information Secondary rewards gained from defence of information

Figure 2: Analysis scheme for the reconstruction of socio-psychological context.

As is usual in qualitative analysis (cf. Heinze & Klusemann, 1980), these steps of analysis cannot be performed just linearly, proceeding from one step to the other until the final level is reached. Each step that is taken will modify the understanding of a communication on the foregoing levels. The analysis, therefore, has to proceed in form of a so-called *hermeneutic circle*, coming back to the prior levels of understanding again and again.

2. Compromising between qualitative and quantitative analyses

The terms "qualitative" and "quantitative" analyses do not refer to radically different approaches. They have to deal with the same methodological problems and each of them has its specific advantages and disadvantages.

The most crucial advantage of a qualitative approach, as it was applied in our Nicaragua studies, is to provide the chance of a detailed exploration of the dynamics of transfer processes by which the latent content of a communication determines the perception its topic.

For simple pragmatic reasons (such as the immense amount of work that is necessary to perform this kind of analysis) qualitative analysis will often remain exemplary, however. A comprehensive and representative picture of the climate of opinion produced by the media cannot be gained. In our studies on the German newspaper coverage of the Gulf War (Kempf, 1994a) we therefore used another approach, and translated our qualitative analysis scheme into coding schedules for quantitative content analysis.

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Such a quantitative approach, however, necessarily restricts the analysis to the more descriptive aspects of the communication. In case of the socio-psychological reconstruction framework, this means to renounce the steps of depth analysis and to analyse only

- what information is given,
- how the information is presented, and
- (if possible)[\[1\]](#) what information is excluded or distorted.

In order to operationalize these questions into content analytical variables two approaches are possible:

- One approach is to perform a qualitative analysis of a subsample of coding units (e.g. newspaper articles, news programs, etc) as a basis for the definition of variables. This is the traditional approach, which makes use of qualitative analysis for a first step of *exploratory research*, upon which a second step of *inspective analysis* (Blumer, 1973) is based, which then applies quantitative methods.
- The other approach is to define the variables on the basis of a theoretical framework. Usually, such a theoretical framework will prove to be adequate only if it is not just abstract theoretical construction but is itself based on prior empirical experience.

In a study on the coverage of allied POWs during the Gulf Crisis (Kempf & Reimann, 1994; Kempf, 1994b), for instance, the definition of content analytical variables was based on a propaganda model by Herman & Chomsky (1988), designed to explain why some subjects are preferably dealt with by the news media whereas no attention is paid to others. An essential criterion for this is the usefulness of a topic. Herman & Chomsky, therefore, refer to "worthy" and "unworthy victims": victims of national or international violence, whose torments, though comparable from an objective point of view, are useful as a weapon against an actual enemy in one case, while they are useless, and hence devoid of interest, in another. If responsibility for violence lies in one's own sphere of influence any reporting on its victims

would be unfavorable to one's national interests.

According to Herman & Chomsky, press coverage on worthy victims differentiates itself from that on unworthy victims both with regard to the focusing on and substantiation of reproaches against the perpetrator (logical understanding: *what* information is given?), as well as with regard to the featuring of the actions and the victims (psycho-logical understanding: *how* is the information presented?).

In the case of worthy victims, the reproaches are delivered in a convincing style, which permits no criticism or alternative interpretations whatsoever, and makes efforts for corroboration from an authority figure. The featuring of the actions and their victims makes use of an aggravating choice of words, and searches for the responsibility of the actions at the top; the events are dramatized, and the victims humanized and featured in great detail and context.

In constructing content analytical variables, there often occurs the danger of "over-fine" categorization. Many quantitative analysts recognize this danger and continually caution against it. And yet to avoid it is to run the risk of oversimplifying the more intricate characteristics of many communications.

"In order to describe 'how an information is presented' one might (among other aspects) classify the presentation as 'matter of fact', 'mildly emotional' and 'highly emotional'..." (Kracauer, 1952, p.635) or one might "attempt to determine the 'direction' of a communication, i.e., the extent to which it is 'for', 'against' or 'neutral' in regard to a given subject" (Kracauer, 1952, p.631). But as Kracauer (1952, p.632) criticizes: "Such a breakdown of a complex direction continuum into relatively elementary scales inevitably invites simplifications apt to blur the picture".

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One possible approach to compromise between these two dangers is to construct a larger number of rather specific variables, which - if necessary - can afterwards be combined into meta-variables that are adequate to the empirical material to be analysed.

In order to comprehend *what* information is given about worthy and unworthy victims of the Gulf war, Kempf & Reimann (1994) thus operationalized the style of focusing on and substantiation of reproaches, by a total of 14 (binary) content analytical variables, describing whether the text passages (paragraphs) to be analysed contain certain style characteristics. Since the frequency of occurrence of some of these variables was far too low, these were finally combined into 6 meta-variables on which the statistical analysis of the data was based:

1. The focus on reproaches against Iraq
2. Factual corroboration of reproaches against Iraq
 - * Repudiation of doubt about the reproaches
 - * Repudiation of counter-reproaches
 - * Doubt about counter-reproaches
3. Expert corroboration of reproaches against Iraq
 - * Internal experts and persons of authority give the reproaches more weight
 - * External experts confirm the reproaches

* or corroborate doubt about counter-reproaches

4. The focus on counter-reproaches against the Allies

5. Factual corroboration of counter-reproaches against the Allies

* Repudiation of doubt about the counter-reproaches

* Repudiation of the reproaches themselves

* Doubt about the reproaches themselves

6. Expert corroboration of counter-reproaches against the Allies

* Internal experts and persons of authority give the counter-reproaches more weight

* External experts confirm the counter-reproaches

* or corroborate doubt about the reproaches themselves

In order to comprehend *how* the information is presented, the featuring of worthy and unworthy victims was operationalized by another set of 12 (binary) content analytical variables, describing style characteristics, one of which (negation of aggravating words for the construction of counter-reproaches) did not occur in the analysed text passages at all and had to therefore be omitted from the analysis. Six other style characteristics occurred so seldom, that they had to be combined into one single meta-variable. Finally, the quantitative analysis of the featuring of victims was based on 6 content analytical variables:

7. Use of aggravating words for the construction of reproaches

8. Iraqi responsibility at the top

9. Humanization of the allied forces

10. Dramatic featuring of the Allies

11. The placing of the events in the everyday world of the allied forces

12. Attempt to see things from the Iraqi point of view

* Negation of aggravating words for the construction of reproaches

* Use of aggravating words for counter-reproaches

* Allied responsibility at the top

* Humanization of Iraqis

* Dramatic featuring of Iraqis

* The placing of the events in the everyday world of the Iraqis

3. The restricted relevance of frequency counts

According to Kracauer (1952, p.632 ff.) the rigidly atomistic nature of content analytical data is likely to preclude inferences as to the way in which the data are interrelated, while, significantly, it is this very interrelationship which often contributes largely, and sometimes definitively, in determining the direction of the overall text:

"... let us suppose that an international communicator wished to ascertain whether his texts evidenced respect for the audience. A good indicator of this characteristic, though certainly not the only one, is the way in which the communicator refers to his listeners. It is immediately evident, however, that neither the relative number of laudatory and critical references, nor distinctions between "moderate" and "excessive" praise or blame will give any valid picture of the degree of esteem in which the audience is actually held. Frequency counts will reveal the amount of different modes of praise or blame, but since any mode may spring from various psychological sources, the counts are unlikely to yield information about the characteristic "respect" itself. The absence or presence of respect could obviously be better inferred from the manner in which the positive and/or negative references to the audience are interwoven; recognizable patterns of reference would no doubt appear in the communication. (...) For instance, a balanced mixture of friendly approval and frank censure, both being voiced on fitting occasions, would certainly indicate that the communicator is treating his audience as he would a friend or peer; conversely, a pattern of abrupt alternation between extreme praise and harsh criticism or threats would indicate that the communicator was bluntly trying to manipulate the minds of his audience..." (Kracauer, 1952, p.639 f.).

In reference to such characteristics, frequency counts are of little relevance. What is relevant are the patterns, the wholes, which can be made manifest by qualitative exegesis only.

Although Kracauer's example is quite convincing, his argumentation is valid only with respect to the limited relevance of frequency counts, but neither with respect to blaming the atomistic nature of content analytical data, nor with respect to claiming that only qualitative analysis can reveal their patterns of interrelationship.

The frequencies listed in Table 1, for instance, reveal that there is only little evidence for the distinction between worthy and unworthy victims as described by Herman & Chomsky.

	Style characteristic	Frequency
The allied position: Reproaches against Iraq:	1: The focus on reproaches	217 45.2%
	2: Factual corroboration	46 9.6%
	3: Expert corroboration	85 17.7%
Iraqi position: (Counter-) reproaches against the Allies:	4: The focus on counter-reproaches	57 11.9%
	5: Factual corroboration	72 15.0%
	6: Expert corroboration	43 9.0%

Table 1: Frequency of the style characteristics of the focusing on and substantiation of reproaches against the war parties.

Although Table 1 shows that the analysed text passages put their focus four times as frequently on reproaches against Iraq (45.2%) than they do on reproaches against the allied forces (11.9%), this does not yet suffice to prove that there is a dissimilar coverage of worthy and unworthy victims. Taking into account that the analysed texts were selected to contain press coverage on *allied* prisoners of war, it is rather surprising that there is such a high rate of counter-reproaches reported.

Moreover, the table shows a higher amount of factual corroboration of counter-reproaches against the Allies (15.0%) than for reproaches against Iraq (9.6%), which does not fit into Herman & Chomsky's model at all.

Since the analysed text passages stem from various daily newspapers, this does not, however, mean a refutation of Herman & Chomsky's model. It only demonstrates that mere frequency distributions of style characteristics are not capable of describing the very style of focusing on and substantiation of reproaches. Since the analysed newspapers represent a wide political spectrum, it cannot be assumed that all of the text passages adhere to the same press coverage style nor that they combine the style characteristics in the same kind of patterns. The distribution in Table 1 may rather be a mixture distribution, resulting from the blending of various press coverage styles. One of these styles may be the one described by Herman & Chomsky - or it may not.

Since it also cannot be assumed that all text passages pertaining to the same newspaper make use of the same style of coverage, this problem cannot be coped with by simply producing distinct frequency tables for the various newspapers. The style used in a given text passage is not (or only loosely) linked to manifest properties of the source from which the respective coding unit stems. The styles of media coverage, therefore, cannot be constructed from any a priori definition of membership of coding units to the various styles of coverage, but they are latent to the frequency table (or - more exactly - to the overall probability distribution of the style characteristics).

In order to reveal these (latent) styles, there is neither a need for less atomistic data nor for qualitative analysis, however, but the mixture distribution in Table 1 must be unmixed.

This can be done by the application of Latent Class Analysis (Lazarsfeld, 1950), which - for the present data - reveals that the distribution in Table 1 results from the mixture of 5 *latent styles* (cf. Kempf & Reimann, 1994):

g	p _g	Reproaches against Iraq			Reproaches against Allies		
		Focus	Fact.	Exp.	Focus	Fact.	Exp.
1	0.411	0.055	0.022	0.010	0.000	0.013	0.000
2	0.380	0.944	0.006	0.365	0.000	0.109	0.000
3	0.092	0.186	0.213	0.000	1.000	0.121	0.439
4	0.071	0.272	0.482	0.000	0.000	1.000	0.521
5	0.047	0.738	0.658	0.733	0.568	0.462	0.264
Total		0.452	0.096	0.177	0.119	0.150	0.090

Table 2: Latent styles of focusing on and substantiation of reproaches against both war parties. g = Style number; p_g = frequency of occurrence; Focus = Focusing on theme; Fact. = Factual corroboration; Exp. = Expert corroboration.

1. The style characteristic for 41.1% of the analysed paragraphs, and therefore by far the most widespread style, describes such text passages in which the reproaches are only touched upon in the fringes. [2] Among them:

- reproaches against Iraq occur only seldom (5.5%); even less frequent are their factual (2.2%) and/or expert corroboration (1%) and/or also factual down-toning (1.3%);

- there are no reproaches whatsoever (0%) and/or expert corroboration (0%) against the allied forces.

2. With 38.0% of the analysed paragraphs, the image of Iraq as the enemy occurs as the second most frequent style of press coverage. It is characterized by:

- Reproaches against Iraq (94.4%), and frequently their expert corroboration (36.5%), hardly any factual

corroboration (0.6%), but occasionally factual down-toning (10.9%).

- No reproaches (0%) and/or expert corroboration (0%) against the allied forces.

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This style, to a large extent, corresponds with the propaganda style described by Herman & Chomsky of focusing on and substantiation of reproaches. However, the propaganda proves to be more differentiated and not completely without criticism on the reproaches. Occasionally it also provides counter-arguments.

3. In 9.2% of the analysed paragraphs there is a style which expresses a critical attitude towards the allied forces:

- These text passages contain without exception reproaches against the allied forces (100%), which frequently find corroboration from experts (43.9%), and occasionally in the facts (12.1%);

- occasionally, in this context, also reproaches against Iraq are focused upon (18.6%) and factually corroborated (21.3%). Reproaches against Iraq experience, however, no expert corroboration whatsoever (0%).

4. The defense of Iraq characterizes the style of 7.1% of the analysed text passages. This includes:

- without exception, the down-toning of reproaches against Iraq (100%), frequently with expert corroboration (52.1%);

- in addition, the reproaches against Iraq itself are also frequently made (27.2%), and arguments about their factual corroboration are cited (48.2%). For these, however, there are no efforts for expert corroboration (0%).

- Reproaches against the allied forces, in contrast, do not occur (0%).

5. Found in 4.7% of the analysed paragraphs, the least frequent style focuses on reproaches against both war parties, especially, though, against Iraq. This style is characterized by the frequent occurrence of all the examined style characteristics,

- whereby reproaches against Iraq (73.8%), their factual (65.8%) and expert corroboration (73.3%) occur relatively more frequently than

- reproaches against the allied forces (56.8%) and/or their corroboration in the facts (46.2%) and from experts (26.4%).

4. General framework of Latent Class Analysis

Content analytical studies usually do not only deal with just one aspect or *theme* to be found in the analysed material. Kempf & Reimann (1994), for instance, investigated two such themes:

1. Focusing on and substantiation of reproaches against the war parties, and

2. Featuring of worthy and unworthy victims.

Formally, these themes may be indicated by $j = 1, \dots, M$.

Each theme is described by a group of content analytical *variables*. These variables may be indicated by i

= 1, ..., k_j.

Each variable can be coded in several *categories*. For example:

0 = statement is not mentioned at all

1 = mere allegation, conjecture or supposition of the statement

2 = factual corroboration and/or arguments in favor of the statement.

These categories may or may not be the same for all variables to be analysed. Even the number of categories per variable may differ. In the simplest case (as in Kempf & Reimann) only binary variables have to be dealt with, describing whether a given style characteristic is

0 = *not* present, or

1 = present

in the analysed coding unit. In general, the categories of a variable *i* belonging to aspect *j* may be indicated by $x = 0, \dots, m_{ij}$.

In constructing content analytical variables, one must make sure that the categories are exhaustive and mutually exclusive (cf. Holsti, 1969). Moreover, since pseudo-empirical results with respect to the relations between variables are to be avoided, one must caution against logical and terminological dependence of variables. If Latent Class Analysis is to be applied to the statistical analysis of the data (as is suggested in the present paper), logical and

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terminological independence of the variables is also a formal requirement of the statistical model.

If there exists one characteristic *style of coverage* of a given theme, this style can be described by the probability distributions of the variables belonging to that theme (cf. Table 3, where $p_{ix} = p(X_{vi}=x)$ denotes the probability of a randomly chosen coding unit *v* to be coded in category *x* of variable *i*).

Categories	Variables				
	1	...	i	...	k _j
0	P_{10}	...	P_{i0}	...	P_{k0}
⋮	⋮		⋮		⋮
x	P_{1x}	...	P_{ix}	...	P_{kx}
⋮	⋮		⋮		⋮
m _{ij}	P_{1m}	...	P_{im}	...	P_{km}

Table 3: Description of the coverage style of a given theme: the case of polytomous variables.

In the case of binary variables, this table will have two lines only. Since each row sums up to 1, each of these lines contains the complete information on the probability distributions of the variables. Hence, one of these lines can be omitted (cf. Table 4).

Category	Variables		
	1	i	k _j
1	P ₁₁	...	P _{k1}

Table 4: Description of the style of coverage of a given theme: the case of binary variables.

Since it is not reasonable to assume that all coding units belong to the same style, the manifest probability distribution in Tables 3 and 4 may rather be a mixture distributions, resulting from the mixture of several *latent styles*. Such latent styles of media coverage of a given theme j may be indicated by $g = 1, \dots, h_j$.

In analogy to the description of (manifest) styles in Table 3 and 4, any latent style can be described by a set of (latent) probability distributions (cf. Tables 5 and 6).

Latent Style	Categories	Variables		
		1	i	k _j
g	0	P _{10/g}	...	P _{k0/g}
	x	P _{1x/g}	...	P _{kx/g}
	m _{ij}	P _{1m/g}	...	P _{km/g}

Table 5: Description of latent styles: the polytomous case.

Latent Style	Categories	Variables		
		1	i	k _j
g	1	P _{11/g}	...	P _{k1/g}

Table 6: Description of latent styles: the binary case.

Generally, $p_{ix/g} = p(X_{vi}=x/v_g)$ denotes the probability of a coding unit v to be coded in category x of variable i if that coding unit belongs to the latent style g.

If the probability distributions in Tables 3 and 4 result from the mixture of h latent styles, then the model equation

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$$p(X_{vi}=x) = \sum_{g=1}^h P_g P_{ix/g}$$

holds, where $p_g = p(v_g)$ denotes the probability of a randomly chosen coding unit to belong to the latent style g . In Latent Class Analysis (LCA), p_g is usually called the *class size* of class (style) g .

The likelihood of a *coding pattern* $\underline{x}_v = (x_{v1}, \dots, x_{vk})$ can thus be expressed by

$$L(\underline{x}_v) = \sum_{g=1}^h p_g \prod_{i=1}^k p_{ixvi/g}$$

The likelihood of the *full data matrix* of n lines (= the coding patterns of a total of n coding units), finally, results from

$$L(\mathbf{X}) = \prod_{v=1}^n L(\underline{x}_v)$$

This likelihood is maximized by use of the so-called EM algorithm of parameter estimation.

With respect to the featuring of worthy and unworthy victims, for instance, Kempf & Reimann (1994) identified three latent styles, as shown in Table 7.

g	p _g	Featuring of allied victims				Iraqi	
		Aggr.	Resp.	Human	Dram.	Every	Persp.
1	0.714	0.282	0.069	0.141	0.001	0.000	0.087
2	0.178	0.250	0.012	0.960	0.804	0.380	0.027
3	0.108	0.885	0.781	0.438	0.405	0.281	0.000
Total		0.342	0.135	0.319	0.187	0.098	0.067

Table 7: Latent styles of featuring of worthy and unworthy victims. Aggr. = Aggravating Words; Resp. = Responsibility at the top; Human = Humanization; Dram. = Dramatic featuring; Every = Everyday world. Iraqi. Persp. = Attempt to see things also from the Iraqi point of view.

Since binary variables were analysed, Table 7 contains only one line per latent style. Each of these lines corresponds to Table 6, with an additional column (p_g) added, which contains the class size parameters. The bottom line of Table 7 shows the over-all distribution of the analysed variables and thus corresponds to Table 4.

From Table 7 it can be concluded:

1. 71.4% of the analysed paragraphs contain a relatively unbiased press coverage: they portray, however, Iraq unequivocally in the role of the perpetrator:

- "with just rage"^[3] (28.2%), with the occasional humanization of allied victims (14.1%), the Iraqi responsibility was occasionally searched for at the top (6.9%), occasionally, though, also taking the Iraqi perspective (8.7%);

- dramatic featuring of the stories (0.1%) and the inclusion of elements from the everyday world of the allied forces (0.0%), however, are basically never deployed, that is never as a style means.

2. Following on the second place, with 17.8% of the analysed text passages, is a propaganda style which does not occur, in this form, in the model by Herman & Chomsky, and which can be described as a propaganda construction of human interest stories:

- Humanization (96.0%) and usually also dramatic featuring (80.4%) of the allied protagonists with frequent inclusions of elements from their everyday world (38.0%), and with occasional use of aggravating words (25%), remain in the foreground of the represented reporting.
- On the other hand, however, it is hardly the case that the responsibility is searched for at the top (1.2%). The stories speak for themselves.
- In this respect, as Iraqi protagonists also appear in human interest stories, there minimally appears a focusing on the Iraqi perspective, i.e. the humanization of Iraqis (2.7%).

3. Only reaching third place (10.8% of the analysed paragraphs), follows the propaganda style described by Herman & Chomsky:[\[4\]](#)

- Usually through the use of aggravating words (88.5%), the responsibility is usually searched for at the top (78.1%). Allied victims are frequently humanized (43.8%) and dramatically featured (40.5%). There is also often an inclusion of elements from the everyday world of the Allies (28.1%).
- The Iraqi perspective, in contrast, is never taken up (0%).

5. Parameter Estimation

Although the LCA model had already been suggested by Lazarsfeld as early as in 1950, no satisfying algorithms for parameter estimation were available until Goodman (1994) developed a stepwise procedure for estimating the unknown parameters p_g and $p_{ix/g}$. As Andersen (1982) shows, the Goodman procedure is a special case of the so-called EM algorithm by Dempster et al. (1977) and thus delivers a maximum-likelihood solution for the parameter estimates.

The rationale of the procedure is the following: If the unknown parameters p_g and $p_{ix/g}$ are known, then the conditional probability $p_{g/xv} = p(v_g/x_v)$ of a coding unit v to belong to style g if it is coded with the coding pattern x_v can be computed from the equation

$$p_{g/xv} = \frac{p_g p_{xv/g}}{\sum_{d=1}^h p_d p_{xv/d}}$$

in which

$$p_{xv/g} = p(x_v/v \in g) = \prod_{i=1}^k p_{ixvi/g}$$

If the probabilities $p_{g/\underline{xv}}$ are known, we can then compute the expected values e_g and e_{gix} of the frequencies

n_g = number of coding units which belong to style g , and

n_{gix} = number of coding units which belong to style g and are coded in category x of variable i ,

given the data matrix \mathbf{X} , from the equations

$$e_g = E(n_g/\mathbf{X}) = \sum_{v=1}^n p_{g/\underline{xv}}$$

and

$$e_{gix} = E(n_{gix}/\mathbf{X}) = \sum_{v: x_{vi}=x} p_{g/\underline{xv}}$$

Vice versa, the probabilities p_g and $p_{ix/g}$ can be computed if the expected frequencies e_g and e_{gix} are known:

$$p_g = e_g/n \quad (8)$$

$$p_{gix} = e_{gix}/n \quad (9)$$

and finally

$$p_{ix/g} = p_{gix}/p_g \quad (10)$$

The EM algorithm makes use of these results and estimates the parameters of the LCA model for a given number (h) of latent styles (classes) by use of a recursive procedure:

1. Choose starting values of the unknown probability parameters p_g and $p_{ix/g}$.
2. E-Step (Expected values): compute the expected frequencies e_g and e_{gix} from p_g and $p_{ix/g}$ and the data matrix \mathbf{X} .
3. M-Step (Maximum-Likelihood estimation): compute the parameters p_g and $p_{ix/g}$ from the expected frequencies.
4. Replace the former values of the probability parameters by the ones computed in the M-Step and go back to the E-Step of the algorithm.

This procedure is carried on until the maximum of the likelihood is attained.

For any given number (h) of latent styles (classes) the computation of a Latent Class Analysis thus results in Maximum Likelihood Estimation of the parameters:

$$p_g = p(v_g) \quad (11a)$$

which is the *class size* of style g: for $g=1, \dots, h$
(= probability of a randomly chosen coding unit to belong to style g); and

$$p_{ix/g} = p(x_{vi}=x/v_g) \quad (11b)$$

which are the *class-specific category probabilities*: for $g=1, \dots, h$; $i=1, \dots, k$ and $x=0, \dots, m_i$.

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Additionally, we also obtain estimates of the *membership probabilities*, which tell us, how likely a given coding unit v with coding pattern \underline{x}_v belongs to a latent style g.

$$p_{g/\underline{x}_v} = p(v_g/\underline{x}_v) \quad (12)$$

for $g=1, \dots, h$ and $v=1, \dots, n$.

Although the EM algorithm seems to be circular at the first glance, this is not the case, since in every E-Step the statistical information of the data matrix \mathbf{X} is reinterpreted on the basis of the results of the foregoing M-step.

From a logical point of view, this is analogous to the hermeneutic circle involved in qualitative analysis, which also is no circle, in fact, but rather a hermeneutic spiral, producing a deeper understanding of a communication with every step of the process

- starting with a first interpretation on the level of logical understanding,
- which is the basis for a first interpretation on the level of psycho-logical understanding,
- upon both of which a first understanding on the level of socio-logical understanding is based,
- from which we then return to the level of logical understanding and so on, until the socio-psychological context is sufficiently reconstructed.

6. Uniqueness of the parameter estimates

Similar to qualitative analysis, where often (or at least sometimes) there does not exist *the* one and only correct interpretation of a communication, the solutions of the EM algorithm must not necessarily be unique. The likelihood function in equation (3) may have several local maxima and even more than one global maximum.

1. If there exists one global maximum of the likelihood function, this can always be found by using the EM algorithm, if suitable starting values have been chosen. In order to avoid less likely solutions, it is advisable, therefore, to run the procedure from several starting values and to select that solution which has the highest likelihood.
2. If there are more than just one global maximum present, however, then more than just one latent

structure can be found. They are equally good explanations of the analysed data matrix, and there is no criterion for deciding which one should be chosen.

In Latent Class Analysis this problem is usually discussed under the somewhat misleading headline of "identifiability" of latent structures.

Sufficient conditions for the identifiability of a latent structure in the surrounding of given parameter estimates have been formulated by McHugh (1956, 1958). According to his theorem, the latent parameters p_g and $p_{ix/g}$ are locally identifiable if the following conditions hold:

$$i) \quad n(C) - 1 = \sum_{i=1}^k m_i - 1 \geq \sum_{i=1}^k m_i - k + h - 1 = n(P)$$

where $n(C)$ is the *number of possible coding patterns* and $n(P)$ denotes the *number of (independent) parameters to be estimated*.

$$ii) \quad \sum_{u=1}^{n(C)} p(\underline{x}_u) = 1$$

(Seite 14)

iii) The functions $p(\underline{x}_u)$ are continuous and have continuous first- and second-order derivatives with respect to p_g and $p_{ix/g}$.

iv) At least $n(P)$ of the $p(\underline{x}_u)$ are functionally independent.

The first of these conditions is a necessary condition and states that the number of independent estimation equations must not be smaller than the number of parameters to be estimated.

Condition ii) is highly redundant and follows directly from the model assumptions. As a consequence of ii), the number of independent equations cannot exceed $n(C) - 1$.

While the first two conditions for identification are a simple matter of counting, the sufficient conditions are more complicated (cf. Rindskopf, 1987, p.84).

Condition iii) can be tested after parameter estimation only, though, according to McHugh (1956, p.337), a violation of this condition is rather improbable.

Condition iv) results from the circumstance that all $p(\underline{x}_u)$'s are polynomials in p_g and $p_{ix/g}$ (cf. equation (1)). Accordingly, the Jacoby-Matrix

$$J = \frac{\partial p(\underline{x}_u)}{\partial \underline{p}_w} \quad (13)$$

must have full rank $n(P)$. (The term \underline{p}_w denotes the vector of all $n(P)$ independent model parameters).

Usually, the problem of identifiability becomes the less critical, the larger the *size of the sample* of coding units is. As a rule of thumb, Formann (1984, p.30), therefore, suggests that the sample size (n) should always be chosen to be greater than the number of parameters to be estimated:

$$n > n(P) \quad (14)$$

7. Model selection

A crucial question for the application of Latent Class Analysis is to decide, *how many* latent classes (styles) should be assumed.

The best solution would be to assume

- as few classes as possible (which would result in a small number of parameters $n(P)$ to be estimated), and
- as many classes as necessary (in order to obtain a high likelihood of the observed data).

Accordingly, we would choose that solution (number of latent classes) for which the *AIC Index* (Akaike's Information Criterion) is the *smallest* (cf. Akaike, 1987):

$$AIC = -2 \ln(L(\mathbf{X})) + 2 n(P) \quad (15)$$

Alternatively, one might also use the *BIC Index* (Best Information Criterion), which puts a higher penalty on additional parameters (cf. Bozdogan, 1987):

$$BIC = -2 \ln(L(\mathbf{X})) + \ln(n) n(P) \quad (16)$$

As compared with the AIC, the BIC tends to favor solutions with fewer latent classes, though both criteria quite frequently produce equivocal results, as was the case in the study on allied POWs during the Gulf War (cf. Kempf, 1994b).

Table 8 shows that, with regard to the focusing on and substantiation of reproaches against the war parties, both, AIC and BIC, have their minimum value at $h=5$ latent classes.

(Seite 15)

h	$\ln(L)$	$n(P)$	AIC	BIC
1	-1228.814	6	2469.627	2494.671
2	-1144.677	13	2315.354	2369.613
3	-1117.526	20	2275.052	2358.528
4	-1100.780	27	2255.559	2368.252
5	-1068.413	34	2204.826	2346.735
6	-1071.074	41	2224.147	2395.273

Table 8: Goodness of fit criteria for the Latent Class Analysis of the focusing on and substantiation of reproaches against both war parties.

With regard to the featuring of worthy and unworthy victims, both, AIC and BIC, have their minimum value at $h=3$ latent classes (cf. Table 9).

h	$\ln(L)$	$n(P)$	AIC	BIC
1	-1302.049	6	2616.098	2641.141

2 -1178.639 13 2383.279 2437.537
 3 -1151.666 20 2343.333 2426.808
 4 -1146.268 27 2346.536 2459.228

Table 9: Goodness of fit criteria for the Latent Class Analysis of the featuring of worthy and unworthy victims.

8. Overall strategy and second order LCA

With an increasing number of variables to be analysed, the number of possible response patterns $n(C)$ as well as the number parameters to be estimated $n(P)$ will grow rapidly. Hence,

1. The number of variables within an analysis should not be too large and the *different aspects or themes* of media coverage should, therefore, be *analysed separately*.

2. In order to investigate how the various styles relating to different aspects or themes of the media coverage are combined with each other, a so-called *second order LCA* can be computed, into which the above identified styles are entered as fundamental variables.

In order to do so, each coding unit is assigned those styles of the first-order LCA's, to which it most probably belongs (i.e. for which its membership probabilities are the largest).

3. The data basis should be as large as possible. Furthermore (and especially in international studies, such as the Journalism in the New World Order Project (cf. Nohrstedt & Ottosen, 1994), where the media coverage from various media types in various countries are analysed), it would also be desirable if the media from different sources were compared on a common basis.

In order to accomplish this, it is advisable that different countries or media types should not be analysed separately, but the complete sample of coding units from *all sources* should be entered into *one single analysis* of a given theme.

4. Since there might be qualitative differences between the media coverage from different sources, however, *source variables* (such as "country" and "media type") should be *included as covariates* in the analyses.

This was done in the second order LCA of the newspaper coverage on allied POWs by Kempf (1994b), where the newspaper of origin was analysed together with the latent styles that had resulted from the first order LCA's.

h ln(L) n(P) AIC BIC

1 -2013.727 14 4055.454 4113.887

2 -1945.191 29 3948.381 4069.422

Table 10: Goodness of fit criteria for the Latent Class Analysis of second order.

Tables 10 and 11 show that the second order LCA led to the identification of two latent styles of the interaction of focusing on reproaches and featuring of victims.[\[5\]](#)

1. The style which is typical for 62.2% of the analysed text passages, and therefore the most frequently used style, is characteristic in relatively unbiased press coverage:

- it touches upon the topic of the ascertained reproaches against Iraq only in the fringes (48.1%). Occasionally it makes use of the image of Iraq as the enemy (23.8%). Still it does not exclude a critical attitude towards the allied forces (15.7%);

- only seldom (but twice as often as Style 2) is Iraq defended (9.1%), and (just as seldom as Style 2) reproaches are ascertained against both war parties (3.3%);

- concerning the featuring of worthy and unworthy victims it is limited to relatively unbiased press coverage (99%);

- human interest stories are never recounted (0%) and the propaganda style described by Herman & Chomsky is also practically non-existent (1%).

2. With 37.8%, there is a propaganda function in more than one-third of the analysed text passages:

- reproaches are usually ascertained under the image of Iraq as the enemy (67.7%). Sometimes the topic is dealt with only in the fringes (24.5%);

- Reproaches against both war parties (3.4%) or the defense of Iraq (4.3%) hardly occur; a critical attitude towards the allied forces is never taken up at all (0%);

- more than two-thirds of the text passages make use of the propaganda style described by Herman & Chomsky (27.0%) and/or the vehicle of propaganda in the form of human interest stories (42.4%).

g p_g x Source Focus Feat.

1 0.622 1 0.046 0.481 0.990

2 0.077 0.238 0.000

3 0.092 0.157 0.010

4 0.075 0.091

5 0.027 0.033

6 0.000

7 0.555

8 0.029

9 0.100

2 0.378 1 0.042 0.245 0.306

2 0.050 0.677 0.424

3 0.127 0.000 0.270

4 0.023 0.043

5 0.151 0.034

6 0.150

7 0.401

8 0.015

9 0.042

Table 11: Latent styles of the interaction of focusing on reproaches and featuring of victims.

Source = Newspaper of origin (1 = *Die Tageszeitung (taz)*; 2 = *Frankfurter Rundschau (FR)*, 3 = *Süddeutsche Zeitung (SZ)*; 4 = *Frankfurter Allgemeine Zeitung (FAZ)*; 5 = *Die Welt (Welt)*; 6 = *Die Bildzeitung (Bild)*; 7 = *Südkurier (SK)*; 8 = *Stuttgarter Zeitung (StZ)*; 9 = *Neue Züricher Zeitung (NZZ)*).

Focus = Latent styles of focusing on and substantiation of reproaches (1 = topic only in the fringes; 2 = the image of Iraq as the enemy; 3 = critical attitude towards allied forces; 4 = defense of Iraq; 5 = reproaches against both war parties).

Feat. = Latent styles of featuring of worthy and unworthy victims (1 = relatively unbiased with Iraq in the role of the perpetrator; 2 = human interest stories; 3 = Propaganda style as described by Herman & Chomsky)

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9. Contingencies with criteria variables

A. Contingencies of latent styles with internal criteria.

If criteria variables (like the source variables) are included as covariates in the computation of the LCA, the conditional distribution of the latent styles can be computed from the equation:

$$p_{g/y} = p_{yg}/p_y$$

where

$$p_y = \sum_{g=1}^h p_{yg}$$

and

$$p_{yg} = p(Y=y, v \in g) = p_g p_{y/g}$$

$p_{y/g}$ denotes the class specific category probability of category y of the criterion variable Y and results directly from the LCA (cf. column "source" in Table 11).

For the occurrence of second order styles in the various daily newspapers, Kempf (1994b) thus obtains the conditional distributions in Table 12, which clearly show the role of the *Welt* and *Bild* newspapers as vehicles for propaganda. Additionally, they also reveal a considerably strong propaganda bias in the *Süddeutsche Zeitung* (SZ).

g	taz	FR	SZ	FAZ	WELT	BILD	SK	StZ	NZZ
1	0.6783	0.7476	0.5815	0.8589	0.2566	0.0000	0.7266	0.7883	0.8195
2	0.3217	0.2524	0.4185	0.1411	0.7434	1.0000	0.2734	0.2117	0.1805
	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 12: Conditional class sizes of the second order styles in the analysed daily newspapers.

While the propaganda function of press coverage (Style 2) in all of the other newspapers amounts to between 14.11% (FAZ) and 32.17% (taz) of the examined text passages, it is characteristic for 41.85% of the text passages in the *Süddeutsche Zeitung* and for almost three quarters of the text passages in the *Welt* (74.34%). The most dramatic propaganda bias is shown in *Bild*, in which the propaganda style occurs in 100% of the analysed text passages.

B. Contingencies of latent styles with external criteria.

For criteria variables which were not included in the LCA, the conditional distribution of the latent styles can be computed from the membership probabilities by the equation:

$$p_{g/y} = p(v \in g | Y=y) = \frac{\sum_{v: y_v=y} p_{g/xv}/n_y}{n_y}$$

where n_y is the number of coding units with $y_v = y$.

For the occurrence of the second order styles during the time periods of January and March 1991, Kempf (1994b) thus obtains the results in Table 13, which show that the propagandist functioning of the press coverage occurs in the armistice month of March considerably less frequently than immediately after the beginning of the war, in January 1991.

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1 0.5716 0.7299

2 0.4284 0.2701

1.0000 1.0000

Table 13: Conditional class sizes of the identified styles in the analysed time periods.

10. Proximity of sources

Whenever the coverage of different sources (e.g. different media, types of media or media stemming from different countries) is analysed, one would be interested in the proximity of usage of the identified latent styles by the various sources.

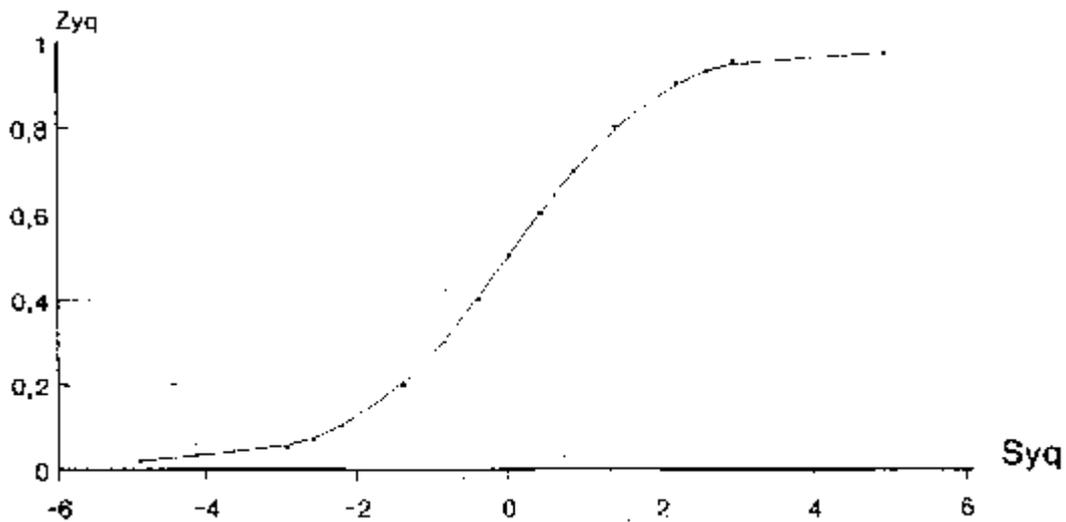


Figure 3: Logit transformation of conditional class sizes into a difference scale.

This can be explored on the basis of the conditional class sizes given the different sources by use of the following index of proximity:

1. For each aspect of coverage $j = 1, \dots, M$ a number h_j of latent styles is identified.
2. For each source there are

$$N = \sum_{j=1}^M h_j$$

conditional class sizes $p_{g/y}$ describing the usage of the various styles pertaining to the different aspects of coverage. These N measures can be arranged in a variable Z_y with observed values $z_{y1}, \dots, z_{yq}, \dots, z_{yN}$.

3. On this basis, the proximity of any two sources $y=1$ and $y=2$ could then be described by the coefficient of correlation $r(Z_1, Z_2)$. The proximity structure of the various countries could be described by a principal

components analysis of the $N(N-1)/2$ correlations. Since the values of the variables Z_1, \dots, Z_N are probabilities, they are restricted between 0 and 1, however. The linear model of the principal components analysis

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$$z_{yq} = a_{y1}f_{1q} + a_{y2}f_{2q} + \dots + a_{yK}f_{Kq} \quad (22)$$

therefore, would not be suitable for this kind of variables. Hence, the probabilities z_{yq} must first be transformed into a difference scale, which can be done by using a so-called *logit transformation*[6]

$$s_{yq} = \ln(z_{yq}) - \ln(1-z_{yq}) \quad (23)$$

as shown in Figure 3.

4. The *index of proximity* between any two sources can then be defined as the coefficient of correlation $r(S_1, S_2)$.

5. The *proximity structure* of the various sources can be described by a principal components analysis of the $N(N-1)/2$ correlations $r(S_1, S_2)$, using the model

$$s_{yq} = a_{y1}f_{1q} + a_{y2}f_{2q} + \dots + a_{yK}f_{Kq} \quad (24)$$

and describing the different countries' usage of the various styles as vectors in a K-dimensional space.

As an example, let us consider the conditional class sizes of the focusing on and substantiation of reproaches (cf. Table 14) and of the featuring of worthy and unworthy victims (cf. Table 15) from the study by Kempf & Reimann (1994).

g	FAZ	FR	SZ	FAZ	WELT	BILD	SK	StZ	NZZ
1	0.3979	0.3994	0.3175	0.4069	0.2527	0.3847	0.5208	0.5726	0.5846
2	0.3944	0.3064	0.3929	0.2759	0.5742	0.5472	0.2898	0.3140	0.2923
3	0.1172	0.0796	0.1384	0.1970	0.0546	0.0000	0.0653	0.0944	0.0529
4	0.0241	0.1703	0.1028	0.0648	0.0346	0.0606	0.0913	0.0150	0.0160
5	0.0664	0.0437	0.0482	0.0550	0.0834	0.0069	0.0324	0.0033	0.0435
	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 14: Conditional class sizes for the identified styles of the focusing on and substantiation of reproaches against both war parties in the analysed daily newspapers.

g	FAZ	FR	SZ	FAZ	WELT	BILD	SK	StZ	NZZ
1	0.7770	0.8876	0.7244	0.8841	0.5065	0.1794	0.7790	0.8401	0.8467
2	0.1265	0.0599	0.2015	0.0290	0.2390	0.6336	0.1821	0.0828	0.0612
3	0.0965	0.0530	0.0746	0.0877	0.2544	0.1870	0.0394	0.0777	0.0528
	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table 15: Conditional class sizes for the identified styles of featuring of worthy and unworthy victims in the analysed daily newspapers.

From these we obtain by means of logit transformation the basis for computing the index of proximity (cf. Table 16).

Intercorrelations of the columns in Table 16 yield the correlation matrix in Table 17, which describes the

proximity of any two sources.

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j	g	taz	FR	SZ	FAZ	WELT	BILD	SK	StZ	NZZ
1	1	-0.4159	-0.4000	-0.7653	-0.3768	-1.0843	-0.4696	0.0832	0.2925	0.3417
1	2	-0.4289	-0.8170	-0.4351	-0.9649	0.2390	0.1894	-0.8964	-0.7815	-0.8842
1	3	-2.9192	-2.4478	-1.8286	-1.4052	-2.8516	-6.0000	-2.6612	-2.2611	-2.7012
1	4	-3.7011	-1.5835	-2.1665	-2.6695	-3.3287	-2.7409	-2.2979	-4.1846	-4.1190
1	5	-2.6434	-3.0857	-2.9830	-2.8439	-2.3970	-4.9693	-3.3967	-5.7105	-3.0905
2	1	1.2483	2.0665	0.9664	2.0318	0.0276	-1.5204	1.2598	1.6590	1.7089
2	2	-1.9323	-2.7533	-1.3769	-3.5110	-1.1582	0.5477	-1.5022	-2.4649	-2.7305
2	3	-2.2322	-2.8830	-2.5181	-2.3420	-1.0753	-1.4696	-3.1938	-2.4740	-2.2799

Table 16: Logit transformation of the conditional class sizes from Tables 14 and 15.

	taz	FR	SZ	FAZ	WELT	BILD	SK	StZ	NZZ
taz	1.0000	0.8282	0.9133	0.8817	0.8313	0.4216	0.8760	0.9130	0.9749
FR		1.0000	0.9149	0.9258	0.5613	0.3283	0.9232	0.8269	0.8566
SZ			1.0000	0.8489	0.7288	0.5017	0.9603	0.9194	0.8734
FAZ				1.0000	0.5546	0.1185	0.8172	0.8489	0.9068
WELT					1.0000	0.7285	0.6645	0.7416	0.7809
BILD						1.0000	0.5492	0.5174	0.4172
SK							1.0000	0.8960	0.8842
StZ								1.0000	0.9153
NZZ									1.0000

Table 17: Proximity of styles of coverage of any two daily newspapers.

Inspection of Table 17 shows that the overall proximity of style usage by the various daily newspapers is rather high (with exception of the *Bildzeitung*). The highest proximity ($r = 0.9749$) is observed between *Die Tageszeitung* and the *Neue Züricher Zeitung*.⁷ The lowest proximity ($r = 0.3283$) is found between *Bildzeitung* and *Frankfurter Rundschau*. The relatively highest proximity between *Bildzeitung* and other papers ($r = 0.7285$) is found between *Bildzeitung* and *Die Welt*.

Principal components analysis of the correlation matrix in Table 17, finally, unveils a proximity structure which can be described by $K = 7$ principal components, the first two of which account for a total of 92.033% of the variance of the (logit transformed) conditional class sizes (cf. Table 18).

P.C. Variance

1	79.539%
2	12.494%
3	4.369%
4	1.514%
5	1.145%
6	0.935%
7	0.004%

Table 18: Percentage of variance of the (logit transformed) conditional class sizes described by the various principal components.

The respective factor loadings of the various daily newspapers on the principal components are shown in Table 19.

Figure 4, finally, shows the location of the various daily newspapers in the plane of the first two principal components and shows that nearly all of the analysed newspapers follow the same general tendency of style usage, when reporting about allied POWs. The only exception is the *Bildzeitung*, in which this general tendency is marked considerably less distinctly.

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The style usage of *Neue Züricher Zeitung*, *Süddeutsche Zeitung*, *Die Tageszeitung* and the two regional papers *Südkurier* and *Stuttgarter Zeitung* are highly similar with respect to aspects described by the first two principal components, while *Die Welt* and - most dramatically - the *Bildzeitung*, both of which have already been identified as propaganda media, show a clear deviation from this standard of style usage. The *Frankfurter Allgemeine Zeitung* and - though less distinct - the *Frankfurter Rundschau* diverge from the standard in the opposite direction, providing a more unbiased news coverage.

P.C.	1	2	3	4	5	6	7
taz	0.9603	0.0785	0.2216	0.0378	-0.0967	0.1088	0.0035
FR	0.9006	0.3080	-0.2111	0.1384	0.1727	-0.0231	0.0061
SZ	0.9629	0.1000	-0.1530	0.0927	-0.1693	-0.0471	0.0036
FAZ	0.8676	0.4476	0.1359	0.0857	0.1273	-0.0694	-0.0129
WELT	0.8285	-0.4637	0.2694	0.1547	-0.0340	0.0308	-0.0002
BILD	0.5760	-0.7547	-0.2694	-0.1547	0.0340	-0.0308	0.0002
SK	0.9515	0.1007	-0.2587	-0.0764	-0.0373	0.1010	-0.0099
StZ	0.9525	0.0646	0.0608	-0.2000	-0.0857	-0.1935	0.0030
NZZ	0.9564	0.1191	0.2044	-0.0781	0.0891	0.1233	0.0066

Table 19: Factor loadings of the various daily newspapers on the principal components.

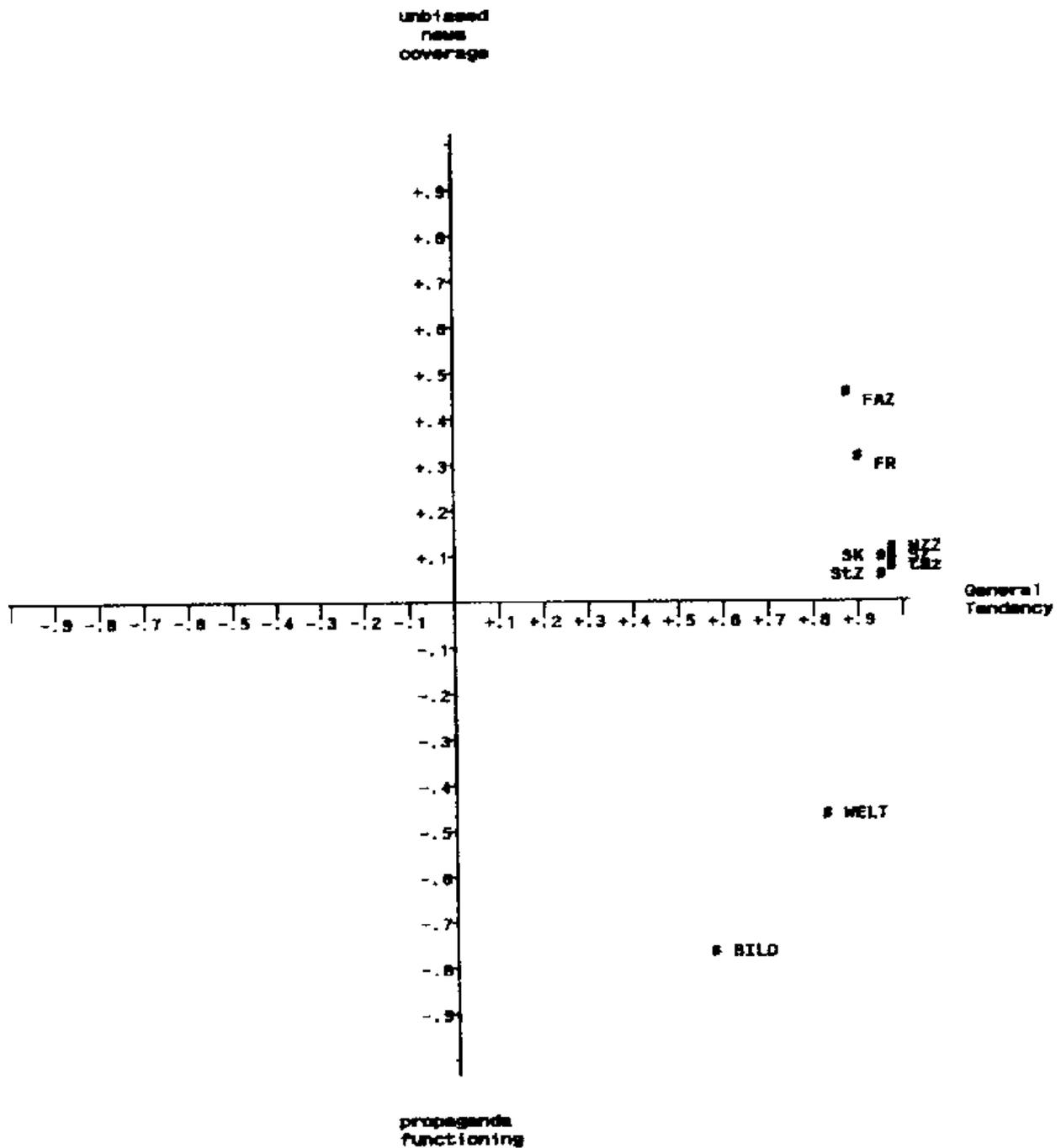


Figure 4: Location of the various daily newspapers in the plane of the first two principal components.

11. Linkage to qualitative analysis

As has been shown so far, the concept of latent styles and its conceptualization by means of Latent Class Analysis are apt to cope with several of the shortcomings of traditional quantitative analyses and, at the same time,

- allows for content analysis of large samples of coding units stemming from various sources and
- thus fulfilling the requirements of representativity and, moreover,

- for a systematic comparison of the sources themselves.

Albeit, *latent styles analysis* is no substitute for qualitative analysis and it cannot supersede it.

"Documents which are not simply agglomerations of facts participate in the process of living, and every word in them vibrates with the intentions in which they originate and simultaneously foreshadows the indefinite effects they may produce. Their content is no longer their content if it is detached from the texture of intimations and implications to which it belongs and taken literally; it exists only with and within this texture..." (Kracauer, 1952, p.641 f.).

If these properties of a text are to be dealt with, there is no alternative to qualitative content analysis. Latent styles analysis can help cope with the representativity and/or typicality problem, however, which is attached to any kind of qualitative analysis.

Qualitative analysts often claim that, though they cannot establish representativity of their analyses, their method is apt to reconstruct the typical instead. But, on a traditional basis, this is not the case either. In order to reconstruct typical patterns of media coverage, one would have to know in advance in *which* documents this typical is to be found.

On the basis of latent styles analysis this sampling problem can be solved by selecting those coding units for further qualitative analysis which are most typical for the identified latent styles.

- For each latent style, those coding units will be selected, which have the highest (membership) probability of belonging to the respective style.

If we deal with coding units that were included in the LCA, their membership probabilities $p_{g/xv}$ are available as a side subsidiary result of the EM algorithm.

Incidentally, one might be interested in the typicality of new coding units, which had not been included in the LCA originally. In this case, their membership probabilities can be computed with the formula

$$p_{g/xv} = \frac{p_g \prod_{i=1}^k p_{ix/g}}{\sum_{j=1}^h p_j \prod_{i=1}^k p_{ix/j}}$$

- Conveying qualitative analyses of a so defined sample of typical coding units can then unveil those aspects of the respective texts or text passages which cannot be covered by quantitative analysis.

Following this approach will finally lead to a detailed understanding of the spectrum of communications that appear to belong to the same style(s) of coverage and - if coding units from different sources are analysed and compared with each other - it will also accomplish the various ways in which the same style(s) are materialized by different media and by different types of media in the different countries from which the empirical material originates.

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12. Qualitative Analysis

The crucial issue for socio-psychological reconstruction of communication - which cannot be covered by merely quantitative analysis - is the identification of its latent content, i.e. the reconstruction of those

psychodramas which are put into scene (or at least suggested) by the communication.

From a systematic point of view, these psychodramas are specific modes of coping with the problem of *alienation* (cf. Kempf, 1991); modes of coping with the fundamental contradiction between understanding oneself as the subject of one's actions, while - at the same time - the products of our hands and minds approach us as alien powers that impose their will upon us (Sève, 1978). Or - as Marx put it - there is a contradiction between understanding ourselves as the subjects of history while, at the same time, history goes on behind the backs of its actors.

It is this latent content, by which a recipient's interpretation of the communication's manifest content is dominated and to which he or she becomes bound; it cannot be altered without giving up - or at least modifying - one's understanding of oneself as a subject, nor without taking the risk of losing control over the very situation in which one is entangled via these psychodramas that are put into scene.

Though this problem of self-entanglement is present in any communication, it becomes of special importance in the case of war propaganda, which tries to maximize the citizens' own willingness for war by means of persuasion, or, as Laswell (1927) puts it:

"Civilian unity is not achieved by the regimentation of muscles. It is achieved by a repetition of ideas rather than movements. The civilian mind is standardized by news not by drills. Propaganda is the method by which this process is aided and abetted."

In his book *The Ancient Foe*, Luostarinen (1986) developed an analytical model of war propaganda, designed to analyse the content of propaganda and to compare propaganda in different wars. Within the framework of socio-psychological reconstruction, this model can be used as an interpretative rationale, stressing crucial points of propaganda communication:

According to Luostarinen, both *restrictive and supportive* methods of information control are used to get people to strongly and personally identify themselves with the goals of war.

1. Restrictive methods try to minimize all information which could cause negative effects on the fighting spirit and thus correspond to the level of socio-logical understanding, which focuses on that information which is

- excluded or
- distorted

by the propaganda.

2. Supportive methods try to maximize all information with a positive effect and thus correspond to the level of logical understanding. According to Luostarinen, this is handled by

- fabrication,
- selection and
- exaggeration

of information.

Though truth is only raw material for the propagandist (and if you have to lie, that is only a technical and operational question, not a moral one), it is better if no lies are needed. This can be achieved if the propagandist succeeds to manipulate the audience's entanglement into the topic of propaganda in order to influence its interpretations in a way that it is apt to reorganize its hierarchy of values "so that winning the war is on the top and all other values - for instance the truth, ethical considerations and individual rights -

are only subservient to the goal" (Luostarinen, 1994, p.1).

According to Luostarinen, four levels of manipulative measures can be found in the content of war propaganda. Within the framework of socio-psychological reconstruction, these can be understood as specifications of some relevant aspects of the psycho-logical understanding of propaganda communications:

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- The *level of social identification* corresponds to the question *how the audience is referred to*, and tells us how our community, group or society is created, what it stands for, how it differs from other groups and what its aim is in the future.

- The *level of the conflict context* tells us the roots of the conflict, why it was unavoidable, what we are defending and why did the enemy attack. It thus implies the *response which is provoked from the audience*.

- The *level of day-to-day events* contains classical propaganda material like description of battles, expressions of support coming from other countries, heroic stories and stories of atrocity. This level, as well as

- the *level of myths*, which contains material about the logic of history, about the meaning of life, about the value of the individual life, etc., finally are in the core of the *psychodrama*, which is put into scene by the propaganda.

Since any successful propaganda is a coherent construction with tight links between the different levels, these cannot be analysed independently of each other, however. They only specify certain aspects that must be considered whenever the latent content of war propaganda is to be reconstructed.

According to Luostarinen (1994, p.3) a typical pattern of war propaganda might be that "single day to day stories are selected and written in a way that fits into the conflict context which supports the suggested identification and which enforces the myths. Myths, as we know, are told in the form of concrete stories, and the order of the elements in the story tells the myths".

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Footnotes

- [1] This was the case in a study by Meder (1994), for instance, who analysed the press coverage of UN resolutions and thus had an objective criterion available for deciding whether the resolutions (or certain aspects of them) were reported correctly, incompletely and/or in a distorted way.
- [2] Such paragraphs, for example, report factually about the Geneva Convention.
- [3] That is, through the use of aggravating words. In view of the topic their complete avoidance would have required particular efforts. They were not used so frequently, however, that one would suppose that there is a hidden agenda with a particular aim in mind.
- [4] A significant difference between this propaganda style and the propaganda construction of human interest stories lies in the fact that the reader is presented here with a completed judgement: concerning the atrocity of the action, as well as concerning the responsibility at the top.
- This is missing from the human interest stories. In these, the readers must (apparently) form their own judgement, even when this is already given by the characteristic style of the story, and cannot be interpreted in any other way than is intended by the propaganda. Through this, however, readers might get the impression that they had formed their own judgements, based on individual experience. Because of this, a judgement might come about that seems particularly credible and thus becomes especially immune to counter-propaganda as well as to attempts at emancipating enlightenment.
- [5] Since no maximum of the likelihood could be found for three or higher latent classes, only goodness of fit statistics for the one- and two-class solutions are presented in Table 10.
- [6] Since $\ln(0) = -\infty$ and $\ln(1) = 0$, the values of S_y must be restricted by the additional definitions $s_{yq} = +6$ for $z_{yq} > 0.9975$ and $s_{yq} = -6$ for $z_{yq} < 0.0025$, which also make the index of proximity more robust with respect to outlier.

⁷ Taking into account that *Die Tageszeitung* is an alternative left-wing paper, while the *Neue Züricher*

Zeitung is a well-established conservative paper, this shows that the style usage of different papers may be quite independent of their political orientation.

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