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ANALYSING CHANGE IN
INTERNATIONAL POLITICS.
A SEMIOTIC METHOD OF
STRUCTURAL CONNOTATION

Alexander-Kenneth Nagel

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ABSTRACT

Processes such as internationalisation and privatisation bring along new challenges both for the conceptualisation and for the measurement of transformations of the state. This paper outlines a semiotic Method of Structural Connotation, which combines content- and network analysis, thus to model change in international politics. After an investigation of the methodical and epistemological chances and pitfalls a 5-step-toolbox is presented and illustrated with a current application: The Bologna-Process for a European Higher Education Area.

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1 INTRODUCTION

παντα ρει και ουδεν μενει. It was ancient Heraklit who reminded us that everything was constantly in flux and nought does ever remain. And so is the state. Although well-known prognoses of globalisation suggest that the transformation of the state is but a recent phenomenon, we can adequately assume that changes in the social organisation of power have been occurring even before the last three decades. Nevertheless, the process of transformation has accelerated considerably due to growing global entanglement, be it economic, cultural or political. Therefore, social sciences have to adjust their analytical apparatus theoretically and conceptually as well as methodically. In this paper, I will propose an answer as to some methodical challenges of the transformation of the state: fragmentation and dynamics of power.

The term state itself is somewhat anachronistic. It suggests stability and formal structures rather than flexibility and informal processes. Therefore, we are well advised to replace this essentialist concept of the state by a more open one, able to cover the recent fluidity of the "traditional" hierarchical model. A process-related deconstruction of this concept discovers two dynamics of "modern" states: internationalisation and privatisation, both of which bring along specific analytical challenges. Internationalisation of politics entails the transcendence of the national level by some kind of international collaboration, be it inter-, trans- or supranational, bi- or multilateral. As a matter of fact, policy making shifts from the territorially well defined entity of the nation state towards a diffuse and fluid multi-level-setting, not accessible to classic heuristics, such as the billiard table of the realistic political theory or bureaucratic monocracy of Max Weber. Besides from normative problems (legitimacy deficits) internationalisation of politics creates considerable empirical challenges how to measure the complexity of intertwining steering-levels.

But it is not the "deterritorialisation" of politics alone, which makes a "methodological nationalism" seem inappropriate: Privatisation, i.e. the involvement of societal actors, not elected, but founded to represent and realise special interests, results in a fragmented and heterogeneous set of political actors. From a normative point of view, this blurring of public and private spheres (Knoke et al. 1996; Laumann and Knoke 1987: 381) is accompanied by another notion of legitimate participation. Public actors with a (procedurally) clear democratic mandate bring in so-called input-legitimacy, which cannot as easily be attributed to private societal actors (Scharpf 1999). The collaboration of the latter, however, may be crucial for policy-implementation. As governance is not

only *by* the people but must as well cause desired effects *for* the people, private actors may grant a dimension of output-legitimacy, apt to make them somehow indispensable.

It has become obvious that recent trends such as internationalisation and privatisation call for an analytical disaggregation and, so to speak, de-essentialisation of "the state". That is, where the heuristic of policy networks comes in. On a conceptual level it helps us to theorise the heterogeneous and informal nature of modern steering configurations. On a methodical and empirical level network-analysis provides a useful toolbox for a structural analysis of political processes from a macro (whole network), meso (sub-groups) and micro (egocentric networks) perspectives. Moreover, network analysis renders possible a relational measurement of power within steering configurations.

While the network-perspective thus offers a solution to the challenges of complexity and informality induced by internationalisation and privatisation, we still need to capture the temporal dimension of transformation. Creating a special network panel design would be suitable and certainly rewarding, however, it entails tremendous financial and organisatorical efforts. On the other hand, retrospective surveys bring along methodical problems, such as recollection- or intentionality-biases. Therefore, I suggest employing content analysis to discover the temporal dimension of political processes. As a matter of fact, qualitative means of content analysis have been used extensively in political science, e.g. for process tracing or the induction of ideal-types. The explanative power of these hermeneutic strategies must on no account be underestimated. Nevertheless, it seems worthwhile to couple them with quantitative approaches of content analysis, such as contingency-analysis to reduce the immense complexity of data in political communication.

In the following sections I will outline a Method of Structural Connotation (MSC) as a simple and efficient way of generating network data by means of content analysis, which *en passant* realises the often heard claim for triangulation (i.e. the synthesis of quantitative and qualitative research strategies). First, I will recollect on some epistemological and methodical aspects of content analysis (Chapter 2) and then present a Method of Structural Connotation in a step-by-step-introduction with an application to the Bologna-Process for a European Higher Education Area (Chapter 3). Finally, I will reflect on the opportunities and limitations as well as promising applications of the methodical toolkit outlined above (Chapter 4).

2   CONTENT ANALYSIS OF POLICY NETWORKS

2.1   Content analysis as instrument for data collection

The idea to combine content- and network-analysis is not entirely new. It was introduced by Wolfgang Seibel und Joerg Raab in a study on persecution-networks (historical network-analysis) (Seibel and Raab 2003), who locate themselves in a tradition of

structural linguistics as proposed by Roberto Franzosi (Franzosi 1998; Franzosi 2004). Methods of content analysis can be used for both the interpretation and the collection of data. In this context, content analysis is used for gaining data, which will then be processed by network analysis. Thereby, the characteristic advantages of content analysis such as reference to the past, social change and non-reactivity are opened up for network analysis. In contrast to retrospective methods, the reference to the past is allowed by the immediate historicity of the symbolic representation, that is, the analysed texts. Provided that the population of documents covers a sufficiently long period, *social change* can be extrapolated. Finally, in contrast to interviews and observation, content analysis is *non-reactive*, as the researcher is not involved into any concrete communication or interaction sequences. At the same time, this "non-communicativity" (Merten) has the disadvantage that the distinctiveness of a problem cannot be considered in the situation itself (*e.g.* by adequate stimuli). Instead, the significance of the material has to be evaluated *ex post*. In addition to that, Merten points out that "reactivity can originate not only from interaction, but also from interpretation" (Merten 1995: 95). Therefore Merten argues that it is wrong to infer from the advantage of non-reactivity to a – whatever kind of – general objectivity. Moreover, the interpretation of the researcher is in itself a construction of meaning in relation to objectified system of symbols.

2.2   Quantitative content analysis: Methods and logics

This is not the place for a detailed discussion of the epistemological problems, which are connected with content analysis in social science. Instead, I will discuss the applicability of some approaches in content analysis with regard to the research question at hand. In this context, the so-called contingency analysis is of particular importance.

The methodical logic of collecting quantitative network data by content analysis follows the method of *frequency analysis*, which has been applied as often as criticised. In the course of this method, the frequency of words (or other relevant symbols) within a text is counted. From the frequency of these symbols we then infer to their significance within the whole text (1st inference) and to their relevance in social reality (2nd inference) (Diekmann 2002: 496ff.). Frequency analysis has been criticised for its naïve positivism and blindness for the semantic context (Mayring 2003: 14ff.). Out of this critique, valence-, contingency- and semantic-field- analysis have emerged along with numerous qualitative approaches.

Valence analysis takes into account that language offers various possibilities to express appraisal, which remain unconsidered, if we only count words. Simply cataloguing words is therefore not enough. Instead, we must scale the associations and dissociations of relevant symbols. Weighted according to their intensity, the coded parts of the text are then counted. Valence analysis maintains the basic principles of frequency

analysis, but in addition to that it takes the metric, evaluating function of language into account.

Contingency analysis also supports the view that the frequency of symbols generally allows to draw conclusions in respect to their degree of relevance. However, it is stressed that it is particularly the *connotation* of symbols which constitutes meaning. A valid content analysis therefore has to draw on the structures of associations of symbols and thus on conditional frequencies. The word contingency in this context refers to the above-average common appearance of coded sequences of symbols within a given unit of analysis. A good point for the application of contingency analysis is the empirical foundation of its principles. Osgood could show in psychological experiments that symbols gain their meaning out of associative structures (i), that these associative structures allow us to draw an inference on according cognitive connections of the sender (ii) and therefore on the sender's (perception of his) life-world ("*Lebenswelt*") (iii) (Osgood 1957).

2.3   Semantic connotation, representation and meaning

Contingency analysis regards the connotation of symbols in the text as an expression of respective cognitive associations of the sender. It is held that cognitive meaning is represented by semantic fields, which we can discover by means of content analysis (Osgood 1952). If we take the social constructivist view that symbols are an externally objectivated part of the cognitive connotations of human actors, we can argue that language *is* the representation of cognitive structures. For network analysis as structural analysis a second step is more important: The cognitive connotations can be seen as representations of the actor's perception of his life-world. This hypothesis is substantiated by psycho-linguistic experiments (see above), so Osgood confirms that "measured contingencies in these messages can be used to make inferences about life-history of the source" (Osgood 1956: 419).

In opposition to this *representational model* (symbols *reflect* social reality), there is the *instrumental model* (symbols *construct* social reality). Citing two older longitudinal studies, Merten suggests that medial presentation corresponds to the facts rather than the other way round, which may serve as evidence for the representational model (Inglis 1938; Albrecht 1956, cited in Merten 1995: 111). Referring to Osgood, he holds it is possible "to infer from textual analysis to attitudes or connotations of the communicator" (Merten 1995: 112). In our case, it is not the biographically framed values and experiences of the communicator, but his or her *perception of social reality*, that is of primary importance. The consciousness of actors of their social embeddedness and the behavioural relevance of this consciousness, are well acknowledged assumptions in social psychology and micro-sociology (Goffman 1969; Mead 1967). Thus, as to the representational model, it should be possible to infer from symbols in documents to cor-

responding perceptions of the actor and thus to real network structures. As a condition for the validity of the representational model it is claimed that the message has to be formulated "unconsciously" and "without intentions". Otherwise there would be intentional distortion. This is a major challenge for content analysis of political communication, which is intentional by definition. Therefore, semiotic indicators have to be specified in order to qualify the situation of communication.

It is obvious that the inference from symbols bound in certain discursive trails (here political communication) to social reality (here network structures) entails a lot of analytical pitfalls between epistemology and ontology. By no means, I want to propagate a naïve structural Platonism of whatever kind. Nevertheless, it *can* be hold that symbolic representations are somehow related to social structure. Therefore, I will stick to a more pragmatic (and 'pragmatist' in the epistemological sense) understanding of *structural relevance* of symbolic representations, which bridges the gap between the representational and the instrumental model as pointed out above. Regardless, if political communication is a mere reflection of the respective network or if it constructs political structures, symbolic representations *can* be used to draw structural insights, given that these insights are always embedded in a process of recognition somewhere between an ex-ante reflection and an ex-post construction of social structures by symbolic representations. From a research-pragmatic point of view, I will show that this distinct nature of content analytical data can be accounted for by means of network analysis.

2.4 From semantic networks to content analytical collection of network data

We have to distinguish between collecting network data by content analysis and content analysis of semantic networks. In the latter case, methods of network analysis are used to illustrate structures of semantic connotation: "Language can be represented as a network of concepts and the relationship among them…This network can be thought of as the social structure of language or, equivalently, the representation of extant social knowledge" (Carley 1997: 79). The social structure of language refers to the historically, culturally and social-structurally formatted stocks of knowledge and patterns of communication (ibid, 79). By network analytical criteria such as density, conductivity and intensity of associative relations idealtypical roles for semantic concepts can be identified (ibid, 87ff.). Thus, semantic network analysis deploys means of network analysis as a method of data analysis in the realm of content analysis. In contrast to that, I will use content analysis as a method of *collecting* network data. Instead of analysing symbols with respect to their socio-semantic structure, I will analyse social structures (networks) represented in symbols.

As to my main methodological assumption actors perceive both their social embeddedness (egocentric networks) and the social structures of their environment (sub-

groups as well as total networks). This perception can be represented in symbols and is therefore viable to content analysis. A content analytical operationalisation of social networks should start with the smallest distinguishable entities, so called dyads. "Dyads are the smallest possible entity of network analysis. It is a network consisting of only two elements, *i.e.* it consists of two elements and the relationships between them" (Jansen 1999: 54). Within *asymmetrical* social relations the first element is the sender and the second is the receiver of material resources, but also of information, symbolical capital (legitimising speech acts) or political pressure (informal: pressure of interest groups; formal: political order). Within *symmetrical* relations both elements are both sender and receiver (thus, symmetry only refers to the structure, not to the content of the relationship, which can be asymmetric nonetheless). In their linguistic representation, all dyads can be identified and distinguished by semiotic criteria. For the collection of network-analytical data in political communication each analytical dimension of semiotics has an own role to play: First, dyads have to be *identified* as to syntactic criteria, thenafter they have to be *interpreted* as to their semantic content and finally, they must be *validated* in terms of political pragmatics.

Syntactically, dyads normally consist of subjects (sender), direct objects (receiver), indirect objects (goods) and predicate (relationship) (see also Seibel and Raab 2003: 206). **Syntactical identification** is formal in the sense that it refers to a potential dyad. The analysis of its content calls for semantic interpretation (does the content reveal a dyadic constitution, if so, what kind of dyad?) and pragmatic validation (is it a descriptive or normative statement?). It should be noted that dyads do not necessarily come along in a clear and easy to grasp syntactic manner (subject – predicate – object). Either sender, receiver, resource, or relationship may be hidden but obvious from the context. In this case, a paraphrase may be used to figure out, if a respective dyad can be coded.[1] Finally, it should be obvious that the syntactic shape is necessary but not sufficient for the content analytical determination of dyads.

To this end, we need a **semantic interpretation**, which presupposes an understanding about the actors and relationships in the network. Interpretation here means the subsumption of syntactically identified semantic units under a scheme of categories of actors and relations. Therefore, proper typologies of actors and relations have to be at hand, which consider the research question and already require some preliminary knowledge about the network best to be gained in an explorative pretest. Semantic in-

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[1] Seibel and Raab even consider non-verbal symbols, such as stamps, to formally express a relationship. With reference to political communication this idea might be fruitfully extended e.g. to the logos of corporate actors (Seibel and Raab 2003). For reasons of reliability (e.g. documentation of retrievals) the Method of Structural Connotation will stick to verbal communication.

terpretation is but the hermeneutic core of a content-analytical strategy to generate network data and crucial for the reliability of the analysis. This is why measures of inter- or intracoder-reliability should be used and (in case of delegation) a profound training for coding is required (Diekmann 2002: 492f.).

Finally, **pragmatic validation** takes into account that communication in general and political communication in particular is influenced by the actors´ intentions and definition of the situation. This general intentionality-bias of (political) speech acts challenges the applicability of the representational model. On the other hand, the borderline between pragmatic analysis and "Ideologiekritik" (criticism of ideology) in an apologetic sense is quite fluent (Mannheim 1969). Pragmatic content analysis has to reflect its own point of view without getting lost in self-referential cascades. Here, pragmatic validation is restricted to the distinction between descriptive and normative statements about network structures. Normative, in this sense, are political claims and 'should-clauses', be they directed ("X should grant membership to Y") or undirected, such as self-obligations ("we should strengthen the mobility of students"). However, there may still be doubtful cases, e.g. when a normative statement implies a descriptive one ("X should *enhance* cooperation with Y"). Here, it is up to the researcher, how restrictive he or she wants to be in coding data. If pragmatic validation is to draw a borderline between rather normative and rather descriptive messages, this must by no account be mistaken to mean that normative statements have to be eliminated from further analysis. Obviously, a statement, such as "X should grant membership to Y" must not be coded as factual membership. However, it entails the exertion of political pressure towards X by the sender (might be coded as a lobbying relation) and a certain appreciation of Y (might be coded as a legitimation relation).

The following chapter turns the epistemological and methodological considerations presented above into a 5-step-toolbox illustrated with a current application: The Bologna-Process for a European Higher Education Area.

3   A METHOD OF STRUCTURAL CONNOTATION

Based on these assumptions regarding interfaces between network and content analysis, I will now outline a method of collecting network data by means of content analysis. This Method of Structural Connotation (MSC) comprises five steps: (i) Set network boundaries (population, unit of analysis and sampling). (ii) Form categories. (iii) Code data. (iv) Compile network matrix. (v) Perform network analysis. This structure systematically and terminologically follows Merten´s outline of contingency analysis and semantic-field analysis (Merten 1995: 165ff.). The single steps will now be illustrated in detail using data from the educational policy network of the so-called Bologna Process for a European Higher Education Area as a showcase. The evidence presented is part of a broader research project on the internationalisation of education politics. The research

question with regard to the Bologna Process was if transnational policy networks would create new channels of political participation by which new actors are involved and if such a reconfiguration of the actor set would lead to new modes of decision-making, e.g. if an increasing share of expert groups would change the style of political interaction from bargaining to arguing (Nagel 2006: 5).

3.1   Boundary setting: Population, unit of analysis and sampling

At the very beginning, both research population and unit of analysis have to be specified and a proper sampling procedure has to be set. In the methodological debate on relational data the problem of random sampling is still unsolved (Scott 2003: 57ff.). The definition of the population also entails setting network boundaries. If this step is led by theoretical considerations only, the strategy of boundary setting is "nominalist". Alternatively, using expert interviews or content analytical measures beforehand, we can also draw a so called "realistic" boundary (Knoke and Kuklinski 1982: 22f.; Wasserman and Faust 1995: 31f.). Boundary setting – as the specification of the field of actors – is the central analytical challenge of network analysis. Jansen notes the following criteria: boundaries of groups or organisations (e.g. formal membership), geographical boarders, participation at certain events or certain qualities (Jansen 1999: 65).

The Bologna Process as a transnational network can easily be demarcated both thematically and structurally. Within the field of educational policy, the process primarily deals with questions of higher education policy. As to the *thematic* boundary setting we can distinguish several policy subfields: acknowledgement, tiered system of studies, modularisation, mobility, quality assurance, promotion of the European dimension and employability. The *structural* definition of the process rests on policy events. The most prominent events of the Bologna Process obviously are the meetings of the Ministers for Education from Sorbonne to Bergen, which makes up a time scale from 1997 until 2006. Thus, the population consists of all dyads in policy documents connected with the policy issues and policy events mentioned above. To create the text-corpus, all policy documents from the official Website of the Bergen-Summit in 2005 were compiled, which seemed appropriate due to the well coordinated and broad collection of information by the Bologna Secretariat. The result was a text corpus of 337 single documents which could be classified into different genres (such as declaration, position paper and national report). As to these genres, there were considerable differences regarding their volumes (position papers with a few pages vs. reports of more than hundred). The formal differences between the genres also yield to variation in terms of contents. E.g. national reports and academic papers are mainly concerned with questions of implementation rather than agenda setting or policy formulation. They can therefore be theoretically excluded. The same refers to the increasing body of newspaper articles and media reports as these genres focus mainly on policy issues (in Germany almost exclusively on the BA-MA-reforms), but less on the actors involved. From these selection procedures there resulted a text-corpus of 291 policy documents with 3929 pages.

In a next sub-step, we have to define our content analytical units. For contingency analysis Osgood provides us with an empirical approximate value of 120 to 210 words per unit. The assumption here is that the scope of a unit directly affects the chance of finding contingencies, because the probability of a common occurrence of certain sequences of symbols rises with the unit of analysis. Here, there is a significant difference to the content analytical collection of network data. Indeed, the identification of dyads is based on an assumption of semantic connotation; however, throughout their clear-cut specified syntactic shape, dyads are less disparate than single, syntactically disconnected, concepts.

For the Bologna Process as a policy network the units of analysis are whole documents. The pages of a text cannot be regarded as independent and variation within a page can only be explained out of the context of the other pages (Krippendorff 1980: 57f.).

Different from attribute data, there are no sufficiently elaborated stochastic models for relational data to ensure their statistical inference yet (Scott 2003: 59ff.). Scott distinguishes three strategies to solve this methodical dilemma: the restriction to pure description of egocentric networks (i), snowball sampling with a successive enlargement of the sample (ii) and the consideration of ideal-typical roles and positions in the network (iii) (Scott 2003: 60f.).

> As far as network-analysis is concerned, I will tie in with the third analytical strategy presented by Scott. If the network-analytical insights are regarded as a mere heuristic and not as an exact image of the actual policy network, it does not require any further sophistication in sampling. However, although inferences from relational data are problematic, MSC provides frequencies of actors and relations as an important "by-product". For these data statistical inference *could* be assured by drawing a random sample of documents. However, as the primary goal here is to figure out ideal-typical positions of actors in policy networks, frequency-data is handled in a merely descriptive sense.

After the network has been demarcated and the population of documents as well as respective sampling procedures have been set, the next step is to render suitable categories of actors and relations for content-analysis.

3.2 Formation of Categories

In accordance with contingency- and semantic-field-analysis the categories have been specified to guide the content-analysis. Policy Networks are characterised by actors (nodes) and their relations (edges). The content-analytical collection of dyads and an ideal-typical representation of network structures therefore require categories for both concepts (actors and relations). A detailed synopsis of the various content-analytical approaches of category formation cannot be provided here (Bilandzic, Koschel, and Scheufele 2004; Früh 2001; Mayring 2003: 74ff.). A comprehensive procedure of cate-

gory building comprises the sub-steps of *selection*, *abstraction*, *stratification* (clustering) and *explication* (theoretical reflection).

3.2.1 Categories of actors

A **theoretical deduction** of typologies of actors can draw some interesting and empirically informed results from existing comparative studies on policy networks. Knoke et al. distinguish the following types of actors: labour unions (i), trade unions (ii), professional associations (iii), interest-groups and social-insurance-agencies (iv), federal agencies (v), legislative boards (vi) and federal interest representation (vii) (Knoke et al. 1996: 73; similar Laumann and Knoke 1987). For transnational policy networks, the role of interest-groups is especially emphasised. Beisheim differentiates (as to the *scope* of their representation of interests) between single associations with specialised political interest and umbrella associations with a more general political scope (Beisheim 2004: 107ff.). Finally, it is held, that so-called epistemic communities play an important role in transnational political processes. These are groups of experts endowed with political power due to their broadly approved knowledge about the respective policy sector (Haas 1992; Stahl 1998: 32f.).

Empirical exploration of categories (selection): For the empirical exploration of actor-typologies a *separate* sample is drawn from the population of policy documents and the corporative actors in this sample are coded.[2] The identification of actors in the documents is based on the explicit naming of a single actor (»EUA«) or a group of actors (»European universities«) and thus does not call for any further semantic sophistication or operationalisation. Nevertheless, the identification of actors involves a decision between a more hermeneutic and a more standardised approach. A standardised procedure requires some previous knowledge of the political process or issue in question. It starts out with a preliminary list of actors, which is then extended e.g. by examining the syntactic environment of these retrievals. A more hermeneutic procedure could apply more sophisticated criteria of selection e.g. the factual participation or obvious interest of an actor in the respective political process.[3] Moreover, measures have to be

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[2] This explorative coding is guided by a *broad* notion of corporative actors: Besides organisations, smaller sub-groups and single persons are also taken into account if their institutional affiliation is obvious. This wide notion does not extend to political processes, programmes and projects, be they affiliated to an organisational entity or not.

[3] A statement such as the following can thus be neglected: "SEFI is convinced of the importance of increased mobility for students, teachers, researchers and administrative staff" (SEFI 2000: 1). What is expressed here, is only a conviction or part of the corporative identity. The actors are mentioned as subject to and not as participants in the political process, whereas the following statement indicates factual participation: „SEFI is already […] de-

set how to account for the frequency of actors. One question is how to deal with *multiple mentions*. As frequency analysis makes a direct inference from the number of notions of an actor to its meaning it may be reasonable to neglect multiple mentions within one paragraph. Another question is *self-mentioning*, which should just be coded once, thus to counter-balance emphatic repetitions as they are frequent in some genres of political communication, such as position papers.

Empirical category-induction (stratification): The heuristic clustering of actors selected in the first step implies grouping similar actors, thus to derive more abstract measures of categorisation. Exemplarily, the clusters for Bologna-actors and professional associations will be presented:
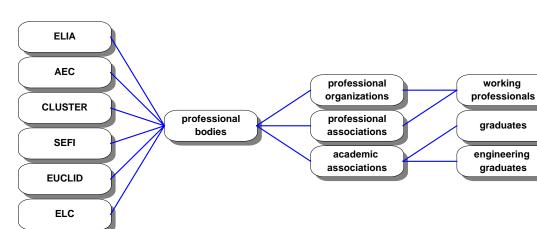
Figure 1: Semantic field of professional bodies (explorative)

The sample contained various references to professional associations. On the transnational level the disciplinary interest-groups »ELIA« (art) and »AEC« (music) are mentioned as well as »CLUSTER« and »SEFI« for engineering, »EUCLID« for librarianship and »ELC« for language-education. On a more abstract level the sample refers to »professional bodies«, distinguishing between academic and professional associations. They represent the interests of »working-professionals« and »graduates«, which denote the micro-level of profession-bound interest-representation.

Synthetic Category-formation (explication): A reconnection of the explorative results to the categorial scheme of Knoke et al. (1996) leads to 13 different types of actors.

First of all, the *European Union* is distinguished as public actor of supranational governance, which category includes the political bodies, such as the »European Council«, the »EU« as an entity itself, as well as the EU-Parliament. *Administrative EU-*

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veloping the European dimension in Education. It does so primarily by serving as a network of engineering educators" (ibid). Accordingly, both »SEFI« and »engineering educators« were coded as actors.

Actors are all supranational public bodies entrusted with the implementation of political programmes, above all the »European Commission« whereas *International Organisations* comprises all international entities outside the supranational framework of the EU, such as UNESCO and OECD. The category *Bologna Actors* marks the institutional core of the process, i.e. the Follow-up Group, Board and Secretariat, while *National and regional actors* comprise all kinds of corporative representatives of national or regional interests (political or administrative*). Accreditation Agencies* include all public and private organisations of accreditation and quality assurance. According to their status, these organisations can pursue both private (commercial agencies) and public interests, such as national councils of accreditation or the supranational European Association for Quality Assurance ENQA. *Expert networks* are characterised by specific expertise and

Table 1: Synthetic Categories of actors

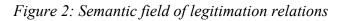| Type of Actor	Focus of Categorisation Status/ Function
Political EU-Actors (1)	public/ supranational governance
Administrative EU-Actors (2)	public/ supranational administration
International Organisations (3)	public/ international governance
Bologna Actors (4)	public/ intergovernmental governance
National and regional actors (5)	public/ national governance
Accreditation Organisations (6) Expert networks (7)	private or public/ private or public interest
Other Interest Groups (8) Universities and HEI Representation (9) Student representation (10)	public or private/ particular interest
Professional Bodies (11) Labour Unions (12) Trade Association (13)	private/ particular interest

academic output that can be processed both in political and academic discourses. Depending on the focus, degree of institutionalisation and source of funding these networks may be either private (research department of a company) or public (university institutes). Other *Interest Groups* is a residual category for those corporative actors that could not reasonably be subsumed under another type of particular representation of interests (students, universities, professions etc.). Not surprisingly, this category encompasses a broad spectrum of private and public actors. *Universities Representation* refers to all higher education institutions and includes single universities as well as HEI-associations with a wider scope, such as the European University Association (EUA). *Student Representation* refers to student participation and respective organisations on the national (e.g. FZS in Germany) and supranational level (ESIB). Finally, there were distinguished *professional bodies, labour unions* and *trade associations* that all repre-

sent particular private interests and represent the relevance of professional cultures and social partners in the field of higher education policy.
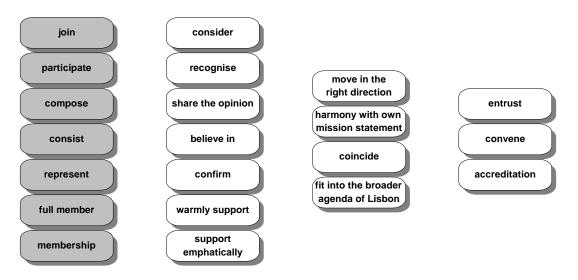
3.2.2 Categories of Relations

Theoretical deduction: Literature on social networks provides several types of relations of different relevance for the analysis of policy networks. After a systematic selection there remain *transaction*, *communication*, *boundary penetration/mediation* as well as *legitimation* (Knoke and Kuklinski 1982: 15; Wasserman and Faust 1995: 37).

Empirical exploration of categories (**selection**): As relations are characterised by the actors and resources involved, relational data are collected in the form of *dyads*. These dyads are selected by means of syntactic identification (s.a.). Detailed examples will be provided when it comes to the third step of MSC: Coding data.

Empirical category-induction (**stratification**): The heuristic clustering depicts the semantic field of legitimation relations as follows:

Figure 2: Semantic field of legitimation relations

The sample contained manifold references of legitimation or legitimacy. The grey block is characterised by *relations of participation, membership and representation*, which are usually connected with a transfer of institutional capital (Esser 2000: 232). The second block depicts *programmatic affirmations* to other actors of different intensity from mere consideration over confirmation up to emphatic support. The third block includes *statements of programmatic congruence* as legitimising speech act whereas the last block, represents *institutionalised transfer* of legitimacy, such as entrusting or accreditation. In contrast to the shaded first block the latter reflect transfers of symbolical capital (Bourdieu 1984).

Synthetic Category-formation (**explication**): If the clusters inferred from the sample of policy documents are reconnected with the types of organisational relations de-

rived from theoretical review, there appears to be a considerable residual of explicit relations of power (see Knoke et al. 1996: 189). This residual is coded into additional types of relations as to their content, such as *persuasion* (lobbying) and formal *directives* (power). Altogether, seven types of relations can be distinguished:

Information relations are characterised by the collection, exchange and dissemination of knowledge and ideas via websites, reports, policy papers and other media. This knowledge may either be related to process in the policy network itself (procedural) or to specific policy-issues (substantial). *Transaction relations* indicate an exchange or transfer of material goods or services in a (more or less) monetary form. This also includes the organisation and realisation of seminars and conferences, which regularly require personal and financial expenses. Transaction relations can be institutionally and organisationally framed by programmes and executive agencies. *Mediation relations* imply the creation of a new tie between corporative actors by bridging structural holes in a network. This may also apply to the active encouragement or strengthening of existing ties. Mediation relations, by their very nature, have to be identified as *triads*. *Legitimation relations* are distinguished by the spontaneous or institutionalised transfer of institutional capital, e.g. by granting membership. These relations are expressed in the symbolic interactions of corporative actors, when they declare programmatic congruence, confirm shared political goals or formally delegate parts of their own sovereignty. *Cooperation relations* represent a general, symmetric collaboration between corporative actors, which cannot be characterised as primary bound to the exchange of information, material resources or legitimation. *Lobby relations* encompass the purposeful and instrumental interventions of corporate actors on other actors within the respective policy network. The scope of intervention may vary between mere suggestions (persuasive lobbying), demand and pressure. *Explicit power relations* apply to the exertion of formal authority. It is similar to lobby relations, as an actor in the policy network is prompted to act in a certain way (and in the interest of the sender). However, this chance is not backed with political pressure from the prompting actor but on institutionally framed governance.

3.2.3 Frequency Analysis

Table 2 marks the frequency distribution of our respective types of relations and actors.[4] Altogether, 3000 dyads have been coded. Among the *actors* national and regional actors proved to be most prevalent (20.5%), followed by the core actors of the Bologna Process (16.7%), the European Commission (13.9%) and university interest representation (13.1%). On the other hand, societal actors, such as labour unions (2.4%), trade associa-

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[4]   The share of actors only refers to actors that were identified as part of a valid dyad. Single mentions have not been coded.

tions (1.9%) and professional bodies (1%) are mentioned very rarely. As a matter of fact, the fragmentation in the actor-set is considerable with the four most prevalent actors being mentioned 8.5 times more often than the four least prevalent ones. These results are largely in line with earlier studies (Nagel 2006: 125). With regard to *relations* transfers of legitimacy are most prevalent (28%), followed by relations of discursive persuasion or pressure (lobbying, 24.5%) and general pledges of support (cooperation, 17.7%). Relations of information, transaction and directives (power) appeared to be less prevalent although the fragmentation is by far smaller than in the actor-set with a ratio of 2.4. The high proportion of legitimacy and cooperation relations indicates a high degree of collective action in the network, the high share of legitimacy and lobby relations points to the relevance of symbolic interaction, be it affirmative or browbeating. In the course of policy formulation it is obviously less important to exert immediate influence on other actors. Instead, coalitions are formed that above all rest on symbolic interaction (legitimation), vague support (cooperation) and exchange of immaterial goods (information). This distribution of relational contents is consistent with the assumptions on the *fluidity* of inter-organisational relations in the Organisational State (Laumann and Knoke 1987). The low prevalence of explicit power relations and monetary transaction suggests that transnational public-private policy-making is characterised by ongoing informal negotiation and symbolic rather than formal directives and material exchange.

Table 2: Prevalence of relations and actors

Actors	Share (in %)	Relations	Share (in %)
National and regional Actors (NAT)	20,15	Information	12,63
Bologna-Actors (BOL)	16,68		
Supranational administrative actors (EU-ADMIN)	13,85	Transaction	8,77
University interest representation (UNI)	13,12		
Accreditation Agencies (ACR)	9,33	Legitimacy	28,00
International Organisations (IOS)	5,72		
Expert Networks (EXP)	4,92	Cooperation	17,73
Student interest representation (STU)	4,70		
Supranational political actors (EU-POL)	3,63	Lobbying	24,50
Labour Unions (LAB)	2,38		
Third countries (NA3)	2,27	Power	8,37
Trade Associations (TRA)	1,87		
Professional Bodies (PRO)	1,02		
Total (N = 3000)	100,00		100,00

3.3   Code Data

Besides the formation of categories, coding data is the hermeneutic core of MSC and crucial for both validity and reliability of the resulting data. As pointed out above, I will

present a semiotic strategy of coding, which takes into account the formal syntactic shape, the relational contents and the pragmatic context.

Syntactic identification: The first sub-step in coding is to identify syntactic dyads. A list of relevant actors can easily be derived by an inversion of the category-building as pointed out above. The simple scanning for actors creates frequency data that can be stored for each actor. Syntactic identification means to screen each actor-retrieval for relational data, i.e. to figure out if the actor in question is syntactically connected to another actor.

> *Example*: A search with the key word "European Commission" has – among others – yielded to the following retrieval: "Ministers also took note of the constructive assistance of the European Commission" (Ministers 2001: 1). There is an obvious syntactic connection of the actor in question (Commission) with another actor (Ministers). Very rarely will the syntactic relation be as clear as subject (sender) – predicate (relational contents) – object (receiver). In many cases the exact syntactic relation will have to be extrapolated by a paraphrase.

> Another relational retrieval of the European Commission provides a good example: "The European University Association is currently running, with financial support from the European Commission, the Joint Masters pilot project." (Reichert and Tauch 2003: 58). The retrieval may be paraphrased as follows: The Commission provides the EUA with financial support (in order to run the Joint Masters project).

Semantic interpretation: The second sub-step is to interpret the identified relational retrievals with respect to the typologies for actors and relations. The hermeneutic challenge is to subsume the dyad-retrievals under the ideal-typical categories, which necessarily entails reducing factual empirical complexity to abstract theoretical terms. Semantic interpretation starts with figuring out the relational contents by investigating the syntactic link between two actors.[5] It may also entail coding the intensity of a relation by means of valence analysis (s.a.). Next, the direction (symmetry/asymmetry) of the relation has to be checked with regard to the actors involved (who is doing what to whom?). Finally, this "proto-dyad" must be interpreted in the context of the document where it was found.

> *Example*: An interpretation of the retrieval "Ministers also took note of the constructive assistance of the European Commission" starts with the relational contents of the syntactic link "took note of the constructive assistance of". In the first place, the relation is marked by acknowledgement and appreciation. This kind of intentional transfer of symbolic capital is a legitimising speech act, the main relational content is thus legitimation. Moreover, the word assistance alludes to a relation of transaction or information. As, however, no further information about the kind of assistance is provided it can reasonably

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[5] It has to be mentioned that in social reality as much as in its symbolic (re-)construction dyads are ambiguous and multiplex. A transaction relation may implicitly entail programmatic affirmation (as a relation of legitimation) or be the result of a power or lobby relation.

be assumed that legitimation is the principal content in this dyad. As such it is a directed transfer of symbolic capital from the "Ministers" (sender) as executive representatives of the national states to the European Commission (receiver).

For the second example a step towards semantic interpretation has already been made by the paraphrase: The Commission provides the EUA with financial support (in order to run the Joint Masters project) (s.a.). The relational content of "provide with financial support" can without hesitation be marked as transaction. The direction is also obvious: The European Commission (sender) transfers money to the European University Association (receiver). As to the multiplexity of the dyad it could be argued that financial support also implies programmatic acknowledgement (legitimation), formal accountability (power) and is but a specific form of cooperation.

The question how to account for the multiplex contents of dyads requires a decision about the hermeneutic depth in coding. An in-depth hermeneutic strategy might indeed code the quoted retrieval as transaction, legitimation, power and cooperation relation. Although it requires more previous knowledge, such an approach may increase data *validity* significantly. Yet, it brings along additional challenges to ensure coding *reliability*. Thus, there is a large continuum of hermeneutic depth between Objective Hermeneutics (Reichertz 2004) and strict standardisation.[6] The decision within this space may e.g. be guided by pragmatic considerations, such as the size and availability of the respective text corpus.

Pragmatic validation: neither of the two former examples exhibits a significant intentional bias. Both of them reveal the relational contents in an easily accessible, descriptive way. Another example will give an impression of the sense and the challenges of pragmatic validation:

Example: In a declaration of the EUA the following dyad has been identified: "Governments are urged to give universities the autonomy they need to introduce the agreed reforms." (EUA 2005: 2). A resultative semantic interpretation might consider this either a relation of power (as formal authority is transferred) or of legitimation (as a symbolic affirmation of the governance-capabilities of universities). Pragmatic validation would argue that is not a factual relationship but only the contents of a claim not yet realised. However, the claim ("Governments are urged") itself may also be considered relational data, the contents of which may be specified as exerting political pressure (i.e. lobbying). Obviously, governments are the receivers of lobbying. The sender is less clear and can only be figured out with reference to the author of the respective document, here: the European University Association.

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[6] With regard to existing empirical studies the approaches of Seibel and Raab (Seibel and Raab 2003) and Nagel (Nagel 2006) can be located on the hermeneutic pole of the continuum. In contrast, the overall census of hyperlink-networks of political actors in Europe (Zimmermann, Koopmans, and Schlecht 2004) as a part of the so called Europub-project (www.europub.com) demarcates the pole of standardization.

While proper coding is crucial for the validity and reliability of data, proper storage and documentation of the retrievals must also be assured. Table 3 presents several retrievals as well as relevant context-information and how they were coded.

Table 3: Exemplary Retrievals

ID	Textcode	Year	Page	*Retrieval*	Relation	Sender	Receiver
3	4-4	2005	29	The *report* from **ENQA** - the European Association for Quality Assurance in Higher Education - *was sent to* the **BFUG** on 21 February 2005 (BFUG 2005c: 29).	1 (Information)	6	4
14	9-1	2005	2	**Governments** *are urged to give* **universities** the autonomy they need to introduce the agreed reforms (EUA 2005: 2).	6 (Lobby)	9	5
29	4-4	2005	98	[The **expert group** is] assisting the **Commission** in the *collection and analysis of information* relevant to the development of a EFQ (BFUG 2005b).	1 (Information)	7	2
38	4-4	2005	2	This [**BFUG**] project *has been funded with support from* the **European Commission** within the frame-work of the Socrates Programme (BFUG 2005a).	2 (Transaction)	2	4
41	9-4	2001	35	The project has been based on the final version of the Diploma Supplement *jointly developed* by the **Council of Europe**, the **European Commission and UNESCO/CEPES** (Haug and Tauch 2001: 35).	5 (Cooperation)	2/3	2/3[7]
41	9-4	2001	15	The "*country reports*" *prepared* by a number of **signatory countries** *for (or shortly after) the meeting of* the **Follow-up Group** in Lisbon in June 2000 were used as a complementary source of information (Haug and Tauch 2001: 15).	1 (Information)	5	4
42	9-4	2003	58	The **European University Association** is currently running*, with financial support from* the **European Commission**, the Joint Masters pilot project (Reichert and Tauch 2003: 58).	2 (Transaction)	2	9
42	9-4	2003	81	**ESIB**, the National Unions of Students in Europe, also *cooperates closely* with the **ENQA** network (Reichert and Tauch 2003: 81)	5 (Cooperation)	10	6
49	4-4	2003	110	**National governments** *should co-operate* to improve statistical data and work with the **European Commission** to review existing 111 monitoring mechanisms (Zgaga 2003: 110).	6 (Lobby)	2	5
51	5-1	2003	7	**Ministers** *charge* the **Follow-up Group** *with organising* a stocktaking process in time for their summit in 2005 (Ministers 2003: 7)	7 (power)	5	4
53	5-1	2001	1	**Ministers** also *took note of the constructive assistance* of the **European Commission** (Ministers 2001: 1).	4 (legitimation)	5	2
79	10-3	2005	7	We [**ESIB**] therefore *call upon* the **European Commission** *to involve* ESIB as well as the other stake-holders in the upcoming work (ESIB 2005: 79).	6 (Lobby)	10	2
91	4-2	2005	3	The **BFUG**…*asks* **ENQA** *to develop rules and regulations* for such a register (BFUG 2005d: 3).	7 (power)	4	6

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[7] Relations of cooperation are undirected and symmetric. Therefore, all actors involved are both senders and receivers.

The first column provides the ID of each document in the text corpus. The second provides a text code with further information about both author and genre of the document.

> E.g. "9-1" is a document issued by a university interest group (9) and classified as a declaration or communiqué (1). The other genres are: (2) internal communication (such as protocols or working papers), (3) position papers and (4) reports.

The third column contains the year of publication, which is especially important for an ex-post extrapolation of change. Finally, the fourth column documents the exact position of the retrieval. Within the retrievals themselves the keywords for semantic interpretation were marked: actors bold and relations in italics to make the hermeneutic procedure more transparent. The codes in the columns from six to eight are based on the typologies of actors and relations as pointed out above. While each row basically represents a dyad (or several if a number of actors is coded) the codes can finally be compiled to a network matrix.

3.4 Network Matrix

The network matrix to be gained by MSC is an actor-by-actor-matrix (so called 1-mode matrix). Both the rows and the columns contain the categories of actors as used for content analysis. All coded dyads can now be entered in the matrix indicating both the contents (type) and intensity (frequency) of the respective relations. Table 4 displays the network matrix of the exemplary retrievals shown above:

Table 4: Network-Matrix

Sender/ Receiver	1	2	3	4	5	6	7	8	9	10	11	12	13
1	x												
2		x	5	2	6				2				
3		5	x										
4				x		7							
5		4		1 7	x								
6				1		x				5			
7		1					X						
8								x					
9					6				x				
10		6				5				x			
11											x		
12												x	
13													x

In this asymmetric network matrix of ideal-typical actors in the Bologna-Process each row contains a sender and each column a receiver of a relation. Reflexive or auto-relations are not coded. The three retrievals that were used to demonstrate coding are highlighted by inversion.

> The first one was a relation of legitimation from national ministers (row 5) to the European Commission (column 2), the second example indicated a transaction relation from the European Commission (row 2) to the EUA (column 9). The third example represents a lobby relation from the EUA (row 9) towards national governments (column 5). Relations of cooperation are coded symmetrically, such as the collaboration between ESIB and ENQA in the retrieval: "ESIB, the National Unions of Students in Europe, also cooperates closely with the ENQA network." (Reichert and Tauch 2003: 81).

As there were only a few exemplary retrievals the resulting matrix is quite "thin" both as to the intensity and multiplexity of dyads. The only multiplex dyad is from corporate actors of federal interest representation (national and regional) towards Bologna Actors. Here, relations of information (1) and power (7) are indicated. Moreover, no dyad was coded more than once. As to the propositions made above, the prevalence of dyads might be interpreted as to the intensity of the respective relation.

> E.g., in an earlier study of the policy network, relations of legitimation from professional bodies towards Bologna Actors were coded 11 times, thus making up almost 4% of all relational retrievals (Nagel 2006: 132).

It is obvious that the complexity of the matrix rises with the number of dyads. To reduce data complexity and to pursue more detailed research, a *decomposition* of the matrix may therefore be reasonable. Thus, a single matrix can be created for each type of relation, e.g. to study the information network apart from the transaction network. These single networks can then be analytically recomposed by means of block model analysis (Jansen 1999: 216f.) to study positions of structural equivalence.

Even more important for the study structural change in policy networks is a decomposition of the matrix with respect to different *time periods*. Sensible setting of time periods requires some previous knowledge about the policy network and the political process in question. As the context information of each dyad contains the publication date of the policy document, separate network matrices can be compiled for each period.

> For the Bologna-Process, there can roughly be distinguished three periods with respect to its most important policy events, the follow-up meetings of the educational ministers: incubation (1998-2000), establishment (2001-2003) and consolidation (2004 up to now). For each period, a network matrix can be compiled and network-analytical coefficients regarding the network on the whole, subgroups or single actors can be calculated and compared over time, thus to discover trends of structural change. As an illustration, figure 3 presents the development of density in three relational dimensions: information, transaction and legitimacy:

The figure shows that all networks have gained in density, however, there are considerable differences as to the overall levels and rate of increase. The overall levels reflect the evidence from cross-section analysis presented above: In the Bologna process, the legitimacy network is distinctly denser than networks of information and transaction with a growing difference among the latter. Moreover, the patterns of increase appear to be divergent: while there is a slowly linear development in the transaction- and information network, there is a rather parabolic trend in the network of legitimacy-transfers.
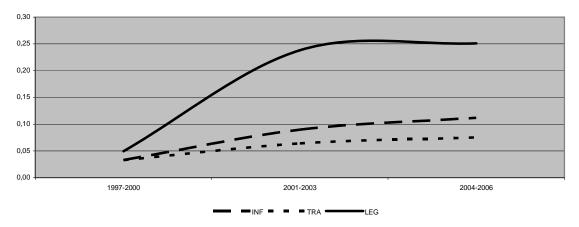
Figure 3: Network density over time

After all, the decomposition of network matrices with respect to relational contents or time-periods promises quite some sophistication in the structural research of politics, especially with regard to structural changes (i.e. configurations of power) that shape the dynamics of agenda setting and policy formulation. However, analytical complexity must never exceed data complexity, i.e. the more sophisticated the analysis aspired (e.g. one type of relation in a particular year), the more relational data have to be collected. The scope of research may therefore be limited by the population of policy documents. Moreover, there is a linear connection between the evolution of a political process and the extent of political communication with respect to this process as illustrated in table 5.
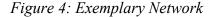
Table 5: Number and length of documents over time

Period	Mean	N
1997-2000	11,2	21
2001-2003	16,4	113
2004-2006	11,9	154
Total	13,6	288

3.5 Network Analysis

After the network matrix or matrices have been compiled, all common measures of network analysis can be performed. It has to be noted that MSC generates complex data

which contains information both as to direction and intensity of a relation and may have to be symmetrised or dichotomised for some procedures of analysis. It is not within the scope of this article to provide an introduction into calculation and interpretation of network analytical coefficients. Instead, I will only give some preliminary hints how to get started even without any further experience in network analysis. For reasons of illustration, I analyse the exemplary network matrix with UCINET.

First of all, an illustration of the network as a whole may serve as a useful heuristic for interpretation. In addition, relevant coefficients, such as density, multiplexity and cohesion can be calculated. Figure 4 shows a visualisation of our exemplary network:

Figure 4: Exemplary Network

At first sight, the heuristic illustration reveals some important characteristics of the whole network, subgroups and the position of single actors. In our example, it is obvious that transnational executive agencies (2) (with the European Commission as a prime example) appear like the literal spider in its web, thus serving as the lynchpin for the cohesion of the whole network. The arrows indicate the direction and the width of lines indicated the intensity of relations. Moreover, cliques as well as central and marginal actors can be identified. Naturally, there is a visualisation-bias in all such kind of prima-facie-evidence. Nevertheless, it may guide the researcher's attention to interesting features of the policy network in question, which may then be examined with more sophistication, e.g. by calculating matrix-algebraic coefficients. In the exemplary network we can account for a density of 9.9% and a degree centralisation of some 38%. There are 2 cliques each consisting of three actors (1: 2,4,5; 2: 2,5,9). European Commission (2) and national states (5) exhibit a complete overlap in cliques, which yields to a position of structural equivalence. Finally, prominent actors can be ascertained e.g. by degree-

centrality, which underlines the central position of the Commission (p(d)= 0.28), national states (p(d)= 0.16) and Bologna Actors (p(d)= 0.16).

4 CONCLUSION

A thorough analysis of "the transformation of the state" brings about both conceptual and methodical challenges for social research. On the conceptual side the monolithic idea of "the state" has to be disaggregated and to be treated in process-related rather than "static" terms (paradigmatically Leibfried and Zürn 2006). On the empirical level, however, new concepts create new challenges: Analytical disaggregation points to "the state" being composed of a huge variety of actors, public and private, national and international. Moreover, unlike the original hierarchical model, these actors are not only connected by relations of instruction embedded in a monocratic apparatus, but cover a large spectrum of exchange, bargaining and symbolic interaction. Therefore, the heuristic of policy networks and network analytical measures in general seem to be an adequate response to the challenges of a disaggregated, governance-centred understanding of the state. On the other hand, the term "transformation" is a claim for the systematic empirical study of political *change*. Although there is a big selection of methodical strategies to investigate social dynamics, such as panel designs, longitudinal research and retrospective interviews, there are considerable restrictions as far as relational (network) data is concerned. To this end, I propose to generate network data by means of contents analysis. In addition to the prosaic, yet crucial point of research pragmatics (content analysis is less expansive than an elaborate panel) there are some good methodological arguments as well, such as non-reactivity and the extrapolation of social change (Diekmann 2002: 486f.).

In this paper I proposed a semiotic Method of Structural Connotation (MSC), which combines content- and network analysis. In the first part it could be shown from a methodological point of view that content analysis can produce *complex relational data* (valued and directional) which meet the criteria of social research (reliability, validity, objectivity). In the second part, I provided a step-by-step application in the style of a toolbox. Although illustrations from the policy domain of education were used, MSC is by far not limited to a single policy domain or to the international sphere, but can suitably be applied wherever relational data shall be analysed in a process-related perspective. Complementary to the well developed tradition of qualitative document analysis in political science, MSC is quantitative in the sense that it takes into account a bigger number of policy documents and reduces the complexity of data by formal and systematic collection procedures, thus improving its reliability. However, semantic interpretation and pragmatic validation involve a hermeneutic strategy to improve the validity of data. Therefore, MSC responds to the fashionable methodological claim of "triangula-

tion" (Flick 2004) by combining quantitative (frequency analysis, network analysis) and qualitative (hermeneutic) strategies.

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6 BIOGRAPHICAL NOTE

Alexander-Kenneth Nagel is research fellow at the Institute for Empirical and Applied Sociology (EMPAS), University of Bremen.

Telephone:	+49 421 218-2756
E-Mail:	anagel@empas.uni-bremen.de
Address:	University of Bremen, Institute for Empirical and Applied Sociology (EMPAS), FVG, Wiener Str., D 28359 Bremen