



## Network analysis and actor-centred approach – A critical review<sup>☆</sup>



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### ABSTRACT

The paper refers to the application of *actor-centred analytical approaches in forest development policy science*. These approaches relate to the analytical features of actors, power, networks as well as formal and informal interests, defined also in Krott's analytical approach. Examples for a methodological framework and methods applied in analytical forest development policy research, are given from the author's own approach. In this paper, the author first anchors these analytical approaches in overall social science research and distincts them from other schools (table). He focuses then, in the 'methodological discussion', on how networks, are being perceived in various ways, by different schools, and on the limitations and risks appearing in the development and application of network approaches. The paper provides guidance on how to deal with these limitations and how to apply (analytical) network approaches. Finally conclusions are drawn on how analytical (network) approaches could be further developed or improved.

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## 1. Introduction

### 1.1. Locating forest related analytical actor-centred approaches in social science research

For more than 15 years analytical approaches to forest and environmental policy analyses have been developed at the Chair of Forest- and Nature Conservation Policy of the Georg-August-University of Göttingen. Since 2008 the author was affiliated with the Chair and developed an own approach to analytical research, published in 2013, in his book on '*Development Cooperation Policy in Forestry – from an Analytical Perspective*' (see Aurenhammer, 2013a).

Following, among others, the analytical approach of Krott (2005, 2014), Krott et al. (2014); c.p. also Krott and Giessen (2014)), Aurenhammer (2011, 2013a,b,c) developed an *actor-centred analytical approach* for the analysis of forest development policy and projects. Many scholars have developed and specified approaches on the basis of Krott's analytical approach for environmental policy (i.e. Hasanagas, 2004), development policy or more specific fields, such as community forestry (i.e. Devkota, 2010; Maryudi, 2011) or rural development policy (i.e. Giessen, 2010).

Based, among others, on the results and experiences with *network analysis* (i.e. Hasanagas, 2004), many of the above scholars (i.e. Aurenhammer, Devkota, Maryudi, Schusser) took a focus on further developing their analytical approaches, *using network analysis as one important part* (in their methodology and as a method) of their analytical research. Nevertheless, they were combining mainly quantitative

type of network analysis in the 'search for *commensurable knowledge*' (della Porta and Keating, 2008, p. 33, italics added) also with (qualitative) methods, used more frequently in interpretative science. Thereby these scholars contribute to the (further) establishment and development of a modern understanding of (analytical) science, where approaches cannot be anymore so clearly distinct into 'positivist' and 'interpretivist' (ibid., pp. 25–29), rather attempt to *combine valuable parts of different schools* (ibid., p. 33ff), i.e. at the methodological level, in triangulation of data. Thereby they, however, ensured compatibility to main hypotheses/theory (in our case analytical), which is central (see below; della Porta and Keating, 2008, pp. 36–37) in applying eclecticism and for cross-fertilization properly.

This paper tries to locate the above analytical approaches in social sciences (cp. Table 1). Thereby it follows, among others, the useful work of della Porta and Keating (2008, latest 2012) on approaches and methodologies in social sciences. Although it is not so clear-cut to categorize or distinct modern, pluralistic approaches, it is very important, both for epistemological and methodological discussion – and the application and combination of methods, to give it a try.

Following above literature, from the point of view of the author, above approaches (not at last the author's own) can be located in a *post-positivist ontology* (belief in objective reality, that is knowable, *but not easy to capture*; critical realism) (della Porta and Keating, 2008, p. 19ff, 23; see also Novy, 2005, p. 17ff) also making use of (parts of) methodology (theoretical concepts/approaches) and methods applied by interpretivists. Post-positivists mainly use *empiricist methodology*, though recognizing the relevance of context (c.p. della Porta and Keating, 2008, p. 32). Although positivists generally apply *quantitative research* (rather than qualitative), and *variables* (rather than cases), today such a distinction in *methodologies* is, according to some, less clear-cut, as it is with positivist versus interpretivist *epistemologies* (i.e. ibid., pp. 25–29).

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**Table 1**  
Distinction of positivist, post-positivist and interpretivist/humanist approaches (after della Porta and Keating, 2008).

Level of distinction	Positivist	Post-positivist	Interpretivist (I)/humanist (H)
Ontology	Objective reality, easy to capture; realism	Objective reality, not easy to capture, critical realism	Objective and subjective reality are intrinsically linked (I); subjective reality, focus on human subjectivity (H)
Epistemology	Dualism; natural laws (causal)	Knowledge influenced by scholar; probabilistic law	Subjective knowledge; contextual (I) or empathetic (H) knowledge
Methodology	Empiricist (reality)	Mainly empiricist, recognizing context	Focus on meaning, context (I) or values, meaning and purposes (H)
Method/s	<ul style="list-style-type: none"> <li>Imitating the natural method</li> <li>Generally quantitative</li> <li>Focus on variables</li> <li>Often larger numbers of cases to reach maximum generalizability</li> <li>Capture of most sources of variation (where focus is on statistical representativity)</li> </ul>	<ul style="list-style-type: none"> <li>Based upon approximations to the natural method</li> <li>Quantitative, but also iterative, qualitative approaches (cases, interviews, participant observation, textual/content analyses) to triangulate quantitative results</li> <li>Focus on those variables, interpretations, seen as relevant for their in/dependent variables</li> <li>Cases are analytically selected, comparatively used (properties that cause cases to differ; i.e. focus on most-different cases to detect such properties, rather than to be able to refer to the representativity of the cases or the probability of the property to occur in practice – occurrence of the property is enough proof to show that differences can exist, that something can have an effect)</li> </ul>	<ul style="list-style-type: none"> <li>Seeking meaning; generally qualitative; textual analysis, discourse analysis; including also: unstructured interviews ('comprehensive story lines') (I)</li> <li>Empathetic interaction (H)</li> <li>No focus on variables</li> <li>Interested in cases as such; selection on the basis of their interest or paradigmatic relevancy</li> <li>Attempt to contribute to the realization of a 'better' society or government</li> </ul>
	<ul style="list-style-type: none"> <li>Large or small number of cases (rigorous, analytical selection); for the latter i.e. (neo-positivist) comparative studies</li> <li>Aim at value-neutrality and at preventing ideological or political impact on the research</li> </ul>		

Post-positivists do also use *iterative, qualitative approaches*, such as cases, interviews, participant observation, textual/content analyses, to *triangulate* with results from quantitative approaches (c.p. *ibid.*, pp. 25–29, 34; Aurenhammer, 2013a, pp. 32–34). They do not, however, attempt to/aim at 'telling a comprehensive story' and hardly use unstructured interviews (*ibid.*). They are not interested to cover all variables, all beliefs/values/interests, stories/interpretations, but only those which seem to be relevant for them in a certain hypothetical/theoretical context (for their independent and dependent variables) (c.p. Krott and Giessen, 2014, p.4). Neither are they 'interested in cases as such, but in the *properties of those cases that cause them to differ*' (della Porta and Keating, 2008, p. 29–30, italics added; Krott, 2012, p. 36). Positivists tend to use large numbers of cases (maximum generalizability; capture of most sources of variation) or smaller numbers (with a rigorous selection, based on differences) (c.p. della Porta and Keating, 2008, p. 29–30; Krott and Giessen, 2014, p. 4). In the latter case, representativity, validity and reliability do not need to be of statistical nature, but can be reached through (i.e. neo-positivist or post-positivist) comparative studies (della Porta and Keating, 2008, pp. 29–30, 35–36; c.p. Aurenhammer, 2011, 2013a). On the contrary interpretivists tend to select cases on the basis of their interest or paradigmatic relevancy (della Porta and Keating, 2008, p. 29–30; della Porta, 2008, p. 198ff).

Moreover, positivists aim at value-neutrality and at preventing ideological or political impact on the research (cp. della Porta and Keating, 2008, p. 31ff; Bauböck, 2008, p. 41ff). While interpretivists/humanistic methodologies attempt to contribute to the realization of a 'better' society or government, positivists refuse to define a 'better society', which they believe to be out of the scope of (value-neutral) research (della Porta and Keating, 2008; Bauböck, 2008; Popper, 1972 cit. in Krott, 2012; Krott, 2012, pp. 36–38; on the positivism dispute: in Bauböck p. 42).<sup>1</sup> They rather would raise the question 'Better, for whom?' Similarly they would refuse to define terms such as more/less sustainable, successful, problematic (here positivists may, if any relation is needed, refer to the stated beliefs or choices of *various* political/social actors). Development theories (i.e. modernization/industrialization theories, 'Cepalism', protectionism theory, three schools of dependency theories, 'ecological development' theories; neo-liberalism/'new modernisation' theories; neo-structuralism/'Nuevo Cepalismo'; neo-extractivism and many more – see Aurenhammer, 2013a, pp. 6–16; Fischer et al., 2004;

Komlosy, 2004; Kolland, 2004; Svampa, 2012) and forest development paradigms provide rich examples for normative ideas of (forest) development (cp. Aurenhammer, 2013a, pp. 6–16; Palo and Lehto, 2012; Dargavel et al., 1985; see also Glück, 1987 on forest ideology)

The absence of an agreement on 'the common good' (the 'sustainable'; the ideal 'development'; the 'successful') even in liberal/pluralistic societies rises attention to the role of *power* (dimensions) in the definition of it (cp. Bauböck, 2008, p. 49–50; see also Krott, 2012; Krott and Giessen, 2014; Aurenhammer, 2013a; Novy, 2005).

Bauböck (2008, p. 50ff) distinguishes three views of power, each generating a set of normative attitudes or questions: (1) *The dark view of political power*, where established power (government) is never normatively legitimate and where sympathies for movements exist that attempt to unsettle existing power structures (scholars are i.e. Gramsci, 1971 and Foucault, 2006; c.p. also Brand, 2011, pp. 153–167); (2) *the rationalist approach* (that is followed in Krott, 2012) that sees discursive legitimation as irrelevant or misleading for explanation and (3) *the normative approach* that describes the conditions, under which power is legitimate. Then, often, following/prioritizing a certain goal and/or applying certain measures to reach a certain goal is considered as or equalled to a legitimate application of power. This is not to confuse with an empirical attempt to explain the conditions/determinants of legitimation.

In *problem-driven approaches* of social science, such as in policy (field) analysis, (cp. Krott, 2005, 2012; Aurenhammer, 2013a; Schubert and Bandelow, 2009; Scharpf, 2000, in: *ibid.*), empirical studies cannot always prevent *normative disputes*. This can be due to the decision to study a certain topic or problem (and others not) or can relate to the operationalization of dependent/independent variables, causal interpretation or small numbers of cases<sup>2</sup> (cp. Bauböck, 2008, p. 55–59; Novy, 2005) or the selection of 'successful' cases – often demanded in externally funded research projects (if done by the researcher and not by the actors of practice, c.p. Krott, 2012, p. 40ff).<sup>3</sup>

<sup>2</sup> However, single and small-N case studies can also be attractive for some explanatory purposes (Bauböck, R., p. 60; see Della Porta, 2008; Vennesson, 2008; and Bray, 2008).

<sup>3</sup> Analytical researchers do not know and may not normatively assume what the right goals (i.e. priority to biodiversity conservation or wood mobilisation) or measures are, i.e. for a 'successful' use of forests. These goals, and thereby 'success' should be/are (subjectively) defined by the (dominant and/or less dominant) actors of practice. The analytical researcher may "identify political factors for the success of the regional projects" (Krott, 2012, p. 40) with a certain or various goals, but it is up to the actors of the practice (in the process of science–practice interaction) to accept or refuse these factors in their implementation of (future) projects (c.p. *ibid.*). Hence, 'success' should be defined by the actors of practice.

<sup>1</sup> Some may however argue, whether a researcher tends to be normative or empiricist/verificationsist/neo-positivist depends on the researcher's personal mentality rather than on the research paradigm/'school' the researcher tends to follow.

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