Michael Kleineberg

Integral Methodological Pluralism: An Organizing Principle for Method Classification

Abstract
In indexing theory, a pragmatic turn has taken place, emphasizing the context of meaning production. This demands multi-perspectival knowledge organization systems in order to cope with the challenge of epistemic pluralism. This paper is concerned with the methodological dimension of human knowledge, including epistemic activities such as applied methods and techniques that are grounded in broader methodologies or foundational paradigms. An expressive cataloging or indexing of methods requires a systematic organization beyond a merely inductively derived listing of common research procedures and practices. Therefore, integral methodological pluralism (IMP) based on integral theory and deduced from fundamental formal-pragmatic distinctions will be proposed as an organizing principle for a classification of methods.

Introduction
In semiotic terms, bibliographic records or resource descriptions are traditionally limited to either descriptive cataloging or indexing based on syntactics (information on author, title, publisher etc. as mere characters regardless of their meaning) or subject cataloging or indexing based on semantics (information on the aboutness or meaning of a document), whereas the field of pragmatics (information about the context of meaning production) has been largely neglected (Kleineberg 2013). In indexing theory, however, a pragmatic turn has taken place, paying more attention to the analysis of underlying epistemic frameworks and activities (Weinberg 1988; Frohmann 1990; Tibbo 1994; Bies 1995; Hjørland 1997; Jacob 2000; Andersen & Christensen 2001; Szostak 2004; Mai 2005; Biagetti 2006; ISKO Italy 2007; Szostak, Gnoli & López-Huertas 2016). Now it is widely accepted that under the condition of epistemic pluralism, the desideratum of a “multi-perspective knowledge organization” (Kaipainen & Hautamäki 2011, 509) needs to be addressed. As argued elsewhere, this task would require a formal indexing of context including at least both viewpoint indexing (theory) as well as method indexing (praxis) based on adequate organizing principles (Kleineberg 2013).

This contribution is concerned with the method aspect (for a twin paper dealing with the viewpoint aspect see Kleineberg 2014) and advocates that an inductively derived listing of common procedures and techniques should be succeeded by a systematic organization based on their interrelations in order to provide a more expressive indexing of methods. Therefore, integral methodological pluralism will be introduced as a basic schema of primordial and irreducible perspectives or methodologies, something that Brier (2000, 438) would call a “meta-frame for qualitatively different types of knowledge.”
Classifying Methods

The need to include the methodological dimension in indexing theory in order to cope with the challenge of “method plurality” (Dervin 2003, 125) while resisting any kind of “method hegemony” (Esbjörn-Hargens & Zimmerman 2009, 7) or a relativistic “anything goes” (Feyerabend 1975, 35) is often articulated (Hutchins 1975; Tibbo 1994; Szostak 2004; Tennis 2008; Taylor & Joudrey 2009; Gnoli 2012). Frequently it is emphasized that interdisciplinary research might benefit from a comprehensive classification and indexing of methods or techniques since researchers need to know, for example, what kinds of methods are already applied to a particular object of interest (and what kinds are not), to what extent methods can be imported from or exported to other fields of study, or in which way they can be combined in mixed or multiple methods research (Szostak, Gnoli & López-Huertas 2016).

In indexing practice, context information about applied methods or techniques is, if provided, relegated to the fringe, hidden in metadata fields like annotation or footnote, and lacking any documentary language. In the case that methodological issues are made explicit in metadata or contributed as additional keywords by the authors, they are usually freely chosen index terms without controlled vocabulary.

Therefore, a conceptual clarification of the close relation between method, methodology, or paradigm is required. As noted by Dervin (2003), the notion of methodology is often reduced to method, although it refers rather to the theoretical analysis of methods. Likewise, Hjørland (2000) argues for a clear-cut distinction of methods that refers exclusively to techniques versus methodologies that are concerned with problems of epistemology or the philosophy of science. Furthermore, Cibangu (2010) emphasizes that both methods as specific research strategies including procedures like data collection and data analysis as well as methodologies as sets of such methods are grounded in foundational paradigms.

In the field of knowledge organization (KO), an initial approach to the methodological dimension is made by Langridge’s (1989) general distinction between topic and form of knowledge, that is, between the objects of study and the ways in which these objects are perceived. For example, zoology is considered to be the science (form) of animals (topic), or ethics the philosophy (form) of morals (topic). Langridge identifies at least twelve qualitatively different forms of knowledge and argues that, in contrast to disciplines, such fundamental forms are few in number, stable in time and mutually exclusive, even though they could be divided further into overlapping specializations. In a similar way, Szostak (2004) argues that research practices and techniques can be reduced to about a dozen scholarly methods that are common in different disciplines and often labeled by the same terms. Further typologies of research methods, without claiming comprehensiveness, are provided by Cibangu (2010) or Chu (2015) for the field of library and information science (LIS) (see Table 1).
Table 1. Examples of inductively derived listings of forms of knowledge or research methods

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prolegomena</strong></td>
<td>Experiment</td>
<td>Focus group</td>
<td>Bibliometrics</td>
</tr>
<tr>
<td><strong>Philosophy</strong></td>
<td>Surveys</td>
<td>Ethnography</td>
<td>Content analysis</td>
</tr>
<tr>
<td><strong>Natural science</strong></td>
<td>Interviews</td>
<td>Grounded theory</td>
<td>Delphi study</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Mathematical models</td>
<td>Discourse analysis</td>
<td>Ethnography, field study</td>
</tr>
<tr>
<td><strong>Human science</strong></td>
<td>Statistical analysis</td>
<td>Content analysis</td>
<td>Experiment</td>
</tr>
<tr>
<td><strong>Social practice</strong></td>
<td>Ethnographic, observational analysis</td>
<td>Survey research</td>
<td>Focus groups</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>Experience, intuition</td>
<td>Historical research</td>
<td>Historical method</td>
</tr>
<tr>
<td><strong>Moral knowledge</strong></td>
<td>Textual analysis</td>
<td>Case studies</td>
<td>Interview</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td>Classification</td>
<td>Naturalistic research</td>
<td>Observation</td>
</tr>
<tr>
<td><strong>Art</strong></td>
<td>Mapmaking</td>
<td>Cultural studies</td>
<td>Questionnaire</td>
</tr>
<tr>
<td><strong>Criticism</strong></td>
<td>Hermeneutics, semiotics</td>
<td>Ethnomethodology</td>
<td>Research diary, journal</td>
</tr>
<tr>
<td><strong>Personal experience</strong></td>
<td>Physical traces</td>
<td></td>
<td>Theoretical approach</td>
</tr>
<tr>
<td></td>
<td>Case studies</td>
<td></td>
<td>Think aloud protocol</td>
</tr>
</tbody>
</table>

**Integral Methodological Pluralism**

It is important to note that such inductively derived listings, that is, term lists without any conceptual relations, can only be a first step towards an expressive knowledge organization system which is able to indicate in which ways all these different methods and techniques are interrelated. The second step from an unbounded methodological pluralism to a specification of its internal relations is emphasized by Wilber’s (2002, 10) integral methodological pluralism:

“All integral methodological pluralism,” in that the pluralism is not a mere eclecticism or grab bag of unrelated paradigms, but a meta-paradigm that weaves together its many threads into an integral tapestry, a unity-in-diversity that slights neither the unity nor the diversity. “Methodological,” in that this is a real paradigm or set of actual practices and behavioral injunctions to bring forth an integral territory, not merely a new holistic theory or maps without any territory. And “pluralism” in that there is no one overriding or privileged injunction (other than to be radically all-inclusive).

Based on integral theory, this intended synthetic approach applies three heuristic principles, namely, non-exclusion (one methodology cannot be used by itself to exclude other legitimate methodologies), unfoldment (some methodologies are more encompassing or more inclusive than others), and enactment (phenomena are brought forth or co-constructed by injunctions, paradigms, or social practices). While the principle of non-exclusion is widely accepted in KO discourse, typical modernist approaches tend to reject the principle of enactment since phenomena are considered to be independent from the observer (ISKO Italy 2007), whereas typical postmodernist approaches tend to reject the principle of unfoldment since different methodologies or paradigms are per se seen as incommensurable (Hjørland 2000; Jacob 2000).

This contribution aims to demonstrate, however, that both theoretical camps might benefit from a comprehensive classification of methods that relies on some
fundamental formal-pragmatic distinctions as analyzed by Habermas (1998) and adopted, for example, by Wilber’s IMP as well as by some KO theorists (Brier 2000; Gracioso 2012; Ma 2012). In contradistinction to empirical pragmatics (e.g., sociolinguistics), Habermas’s formal pragmatics seeks to analyze general patterns of communicative action that apply to all languages and all contexts of knowledge or information exchange such as typologies of perspectives (e.g., third-person, second-person, first-person), world relations (e.g., objective, social, subjective), or validity claims (e.g., truth, rightness, truthfulness).

As shown in Figure 1, these formal-pragmatic features are, to some extent, reflected by important methodological distinctions such as quantitative methodologies vs. qualitative methodologies (Hjørland 2000; Dervin 2003; Ma 2012; Chu 2015), methodological individualism vs. methodological collectivism (Hjørland 1997, 2000; Ritzer 2001), or inside vs. outside approaches as described, for example, by Ma (2012, 1864) with regard to the study of human culture:

To attain an insider, participant view and an intersubjective understanding of the culture, the researcher must take a position (including the first-, second-, and third-person positions) with the cultural group, for observing as an “outsider” or a “neutral researcher” (i.e., maintaining a third-person position without taking a first- or second-person position) implies a subject-object relationship with the cultural group.

Based on these three formal-pragmatic distinctions, IMP deduces eight fundamental
zones that can be considered as major “methodological families” (Esbjörn-Hargens 2006, 84), each including sub-classes of specific methods or techniques (see Table 2).

Table 2. IMP as an example of a deductively derived basic schema for method classification

<table>
<thead>
<tr>
<th>Main class</th>
<th>Representative methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td></td>
</tr>
<tr>
<td>Inside #1</td>
<td>Phenomenological analysis (e.g., Husserl)</td>
</tr>
<tr>
<td>Outside #2</td>
<td>Cognitive analysis (e.g., Piaget)</td>
</tr>
<tr>
<td>Collective</td>
<td></td>
</tr>
<tr>
<td>Inside #3</td>
<td>Hermeneutic analysis (e.g., Gadamer)</td>
</tr>
<tr>
<td>Outside #4</td>
<td>Structuralist analysis (e.g., Lévi-Strauss)</td>
</tr>
<tr>
<td>Quantitative</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td></td>
</tr>
<tr>
<td>Inside #5</td>
<td>Autopoietic analysis (e.g., Maturana &amp; Varela)</td>
</tr>
<tr>
<td>Outside #6</td>
<td>Behavioral analysis (e.g., Skinner)</td>
</tr>
<tr>
<td>Collective</td>
<td></td>
</tr>
<tr>
<td>Inside #7</td>
<td>Autopoietic social systems analysis (e.g., Luhmann)</td>
</tr>
<tr>
<td>Outside #8</td>
<td>Social systems analysis (e.g., Bertalanffy)</td>
</tr>
</tbody>
</table>

For example, zone #1 can be represented by classical phenomenology using Edmund Husserl’s procedure of phenomenological reduction or epoché (direct approach: researcher’s own consciousness), even though not every phenomenological approach is strictly limited to this particular zone (Martin 2008; Küpers 2009). By contrast, zone #2 can be represented by cognitive psychology using Jean Piaget’s clinical method, that is, psychometric tests combined with open-ended interviews (indirect approach: consciousness of others) (for a detailed overview of the IMP zones see Wilber 2002, 2006; Esbjörn-Hargens 2006; Esbjörn-Hargens & Zimmerman 2009; Kleineberg 2013).

The decisive point is that each methodological zone requires its own narrative or “description system” (Brier 2000, 435) and cannot be reduced to other zones because different kinds of practices are concerned with different kinds of phenomena. Nevertheless, IMP emphasizes the complementary character of these zones and offers a coherent framework or “methodological relationism” (Ritzer 2001, 126; see also Juckes & Barresi 1993) for both identifying hidden reductionism as well as applying multiple methods research beyond a mere “methodological eclecticism” (Dousa & Ibekwe-SanJuan 2014, 152; see also Olson 1995; Hjørland 2000).

Method Analysis and Indexing

A short sketch of an IMP-based method analysis and indexing will be presented, focusing on the example of LIS research investigating users of information systems such as libraries or online environments. As noted by Hjørland (2000, 515), user
studies cover a broad range of divergent methodological approaches such as behaviorist, cognitivist, hermeneutic, sociological, or domain analytic. According to IMP, a convenient way to identify a methodological zone, even if the applied methods or foundational paradigms are not made explicit, is to ask three simple questions:

a) Is it a qualitative (inter-/subjective) or quantitative (inter-/objective) approach?

b) Is the focus on an individual (element) or a collective (system)?

c) Is it an inside (direct) or an outside (indirect) view?

In LIS research, one might expect that individual users are studied either quantitatively, for example, by using zone #6 methods (e.g., information behavior analysis, log file analysis, eye-tracking observation, questionnaire, survey), or qualitatively by using zone #2 methods (e.g., cognitive analysis, interview) or zone #1 methods (e.g., thinking aloud protocol, journal writing). Since individual users are always already culturally and socially embedded in knowledge domains or user groups, they cannot be adequately understood without using also methodological collectivism. This too might be done either quantitatively by using, for example, zone #8 methods (e.g., network analysis, informetrics, social systems analysis), or qualitatively by using zone #3 methods (e.g., hermeneutic analysis, focus group, participant observation), or zone #4 methods (e.g., discourse analysis, domain analysis, detached observation).

Furthermore, the IMP zones offer a disambiguation tool for approaches that cover different methods under the same label. For example, the umbrella term “domain analysis” refers to both quantitative methods (e.g., citation analysis: zone #8) as well as qualitative methods (e.g., discourse analysis: zone #4). Likewise, information behavior research applies both quantitative methodological individualism (e.g., behaviorist analysis: zone #6) as well as qualitative methodological collectivism with regard to “values and norms of cultural and social groups” (Ma 2012, 1865) associated with zones #3 and #4. In the same way, the multiple methods approach cognitive work analysis might be simultaneously concerned with a sociocultural dimension (e.g., zones #3, #4), an environmental or organizational dimension (e.g., zones #7, #8), and an individual dimension (e.g., zones #1, #2, #5, #6). In this respect, an IMP analysis is also able to identify methodological reductionism or even new research directions.

As often noted, the methodological dimension is deeply intertwined with the ontological and epistemological dimensions of human knowledge (Olson 1995; Gnoli 2012; Ma 2012; Kleineberg 2013). Therefore, Wilber’s (2002, 24) so-called “integral indexing” is an attempt to include and interrelate all three of them within a non-relativistic integral perspectivism that is formalized by an elaborated IMP notation system (Esbjörn-Hargens & Zimmerman 2009; Fuhs 2010).

**Conclusion**

In addition to merely inductively derived listings of research practices, integral methodological pluralism, deduced from fundamental formal-pragmatic distinctions,
offers a comprehensive basic schema for a classification of methods that is able to show the complementary character of different approaches, to identify methodological reductionism, and to guide interdisciplinary or multiple methods research. This contribution emphasizes that expressive context indexing beyond term lists calls for new organizing principles. In more general terms, one might conclude that in the field of knowledge organization the pragmatic turn requires a formal-pragmatic twist.

References
Andersen, Jack & Christensen, Frank S. (2001). Wittgenstein and indexing theory. In
Albrechtsen, Hanne & Mai, Jens-Erik, eds., Advances in classification research, Vol. 10.
Biagetti, Maria T. (2006). Indexing and scientific research needs. In Budin, Gerhard et. al., eds.,
Perspektiven. In Meder, Norbert; Jaenecke, Peter & Schmitz-Esser, Winfried, eds.,
Brier, Søren (2000). Trans-scientific frameworks of knowing: Complementary views of the
Library & Information Science Research, 37(1): 36-41.
Cibangu, Sylvain K. (2010). Paradigms, methodologies, and methods. Library & Information
Science Research, 32: 177-8.
Dervin, Brenda (2003). Given a context by any other name: Methodological tools for taming the
unruly beast. In Dervin, Brenda et al., eds., Sense-making methodology reader: Selected
Dousa, Thomas M., & Ibekwe-SanJuan, Fidelia (2014). Epistemological and methodological
eclecticism in the construction of knowledge organization systems: The case of analytico-
synthetic KOSs. In Babik, Wieslaw, ed., Knowledge organization in the 21st century:
Gnoli, Claudio (2012). Metadata about what?: Distinguishing between ontic, epistemic and
Gracioso, Luciana S. (2012). Language philosophy in the context of knowledge organization in


Tennis, Joseph T. (2008). Epistemology, theory, and methodology in knowledge organization:


