Classification in Terms of Basic Concepts

ASIS&T SIG-CR Workshop 2012
Rick Szostak
University of Alberta
rszostak@ualberta.ca

KEYWORDS
Basic Concepts, Interdisciplinarity, Subject Headings

EXTENDED ABSTRACT

My presentation follows a set of logical arguments:

1. The vast majority of scholarly research addresses how one or more things affect in some way(s) one or more other things. This is true of much of the general literature too:

    (gardener)(grow)(flowers)
    (dogs)(bite)(mail carriers)

    [I illustrate this point in Szostak (2003). Note that works that describe only one thing will also be well handled by the classification outlined below.]

2. If a book is about dogs biting mail carriers, the ideal subject entry is "(mail carriers)(bitten by)(dogs)." The classification system then reflects the actual structure of works.

3. This is best done by allowing 'things' (dogs, mail carriers) and 'relationships' (biting) to be freely combined in both classification and search (In the right order, so as not to mistakenly recall the smaller but more intriguing literature on mail carriers biting dogs.). This spares the classificationist from having to enumerate a vast array of combinations, and the user from having to ascertain how a particular combination was treated.

4. The real beauty of this approach is that the terms "dog," "biting," and "mail carrier" are far less ambiguous than any term the classificationist might have derived to capture this complex relationship. (Szostak, 2011).

5. So we simultaneously get:
    - Subject headings that better capture the essence of works
    - Subject headings that are less ambiguous
    - Far shorter schedules, because the vast majority of existing subject headings capture (often poorly) combinations among a much smaller set of things and relationships
    - Greater flexibility, for new subjects will generally be found to be combinations of things and relationships that are already in the schedules (The need for greater flexibility in classification was stressed by Grant Campbell in his presentation)
    - Superior hierarchical structures. At present, many classifications squeeze causal statements into hierarchical structures of subjects. In the proposed classification, hierarchical subdivision could proceed according to logical principles, since causal arguments will be handled through combinations of terms (Dave Durbin discussed challenges in hierarchy during his presentation).

6. This approach was extremely difficult with card catalogues but is easy now.

7. It is an empirical question as to whether this approach supports a truly universal classification. (We should not assume this result. The philosophical literature establishes that some degree of ambiguity is inevitable but cannot by its nature determine how much) (Again see Szostak 2011)

8. This approach reduces ambiguity as much as it is possible to do. That is, the ambiguity-minimizing strategy is to break complex concepts into their more basic components.

9. Only by developing a wide-ranging classification of things and relationships, and showing that these can be combined to (better) capture the essence of existing subject headings (or classes), can we then answer the empirical question.

10. This has been done:
The Basic Concepts Classification
http://www.economics.ualberta.ca/en/Facultyand
Staff/~/media/economics/FacultyAndStaff/Szost
ak/Szostak-Basic-Concept-Classification2.pdf
And my translation of 300-340 in DDC
into BCC (which often increased clarity, and
only rarely required more than 3-4 basic terms).
http://www.economics.ualberta.ca/en/Facultyand
Staff/~/media/economics/FacultyAndStaff/Szost
ak/Szostak-Dewey-Conversion-Table.pdf

(See also the Integrative Levels Classification
at www.iskoi.org/ilc)

11. We need to exercise collective judgment as to
whether this approach renders a truly universal
classification feasible. It deserves to be stressed
again that we should not assume any particular
degree of ambiguity at the outset.

12. A positive result is important because such a
classification:
- Will greatly facilitate
interdisciplinary research.
- Yet at the same time allows
disciplinary (specialized) research
to continue as it has, but the new
classification will both facilitate
within-discipline searches and
increase the likelihood that
specialized researchers will become
aware of related research in other
fields.

13. These results are even truer if time allowed
discussion of the other critical element of BCC:
classifying works also in terms of theory and
method applied (see Szostak 2004, Gnoli and
Szostak 2008).

14. Indeed, I have become convinced that the most
important key to unlocking the potential of
interdisciplinarity lies in the development of
better classification systems (For two decades
my research has focused on how to best facilitate
interdisciplinary research (and teaching)

15. The proposed system:
- Allows users to better find what they
are looking for in any field (since they
can search by combinations of things,
relationships, theories, methods, and
perspectives applied).
- Dramatically increases the chance of
finding related work that one didn't
know to look for (since works from
other perspectives addressing the same
or similar questions will be easily
found).
- Increases our ability to understand
works from other fields once we locate

them (since the practice of breaking
complex concepts into more basic
concepts facilitates understanding).

16. The same applies to any groups: The proposed
classification will enhance the possibility of
cross-group understanding, while also
facilitating within-group conversation. (Szostak
2012)

17. Moreover, a classification grounded in basic
concepts may well be the only way of achieving
the goal of having multiple databases utilizing
the same classification. Commercial and even
non-profit websites are unlikely to adopt an
existing KOS but may adopt one that allows
combinations of simple terms:
(shoes)(for)(hiking)(desert)

Going forward, my research agenda involves:
- Continuing to Develop BCC (I am working in
particular on natural science and humanities)
- User testing
- Continuing to argue for both the desirability and
feasibility of the system (I plan on looking at
samples from LCSH, especially 'new additions',
and showing how these are generally
combinations of simpler terms contained in the
BCC) [I am also co-authoring a book on
"Interdisciplinary Knowledge Organization"]

I invite:
- Comments
- Critiques

but especially
- Collaboration. I have benefitted enormously
from my previous interactions with scholars such
as Claudio Gnoli, and invite others to join in the
development of the first truly universal
classification. This is a moment in time – as new
online websites proliferate – when such a project
has a considerable chance of success.

REFERENCES

Gnoli, C. & Szostak, R. (2008) Classifying by
phenomena, theories, and methods: examples with
focused social science theories, in *Culture and
identity in knowledge organization,* proceedings of
the 10th international ISKO conference, Montréal,
2008 (pp. 205-211) Würzburg: Ergon.

Szostak, R. (2012) Speaking Truth to Power in
Classification. Letter to the editor. Forthcoming,
Knowledge Organization 40:1.

Szostak, R. (2011). "Complex Concepts into Basic
Concepts" *Journal of the American Society for
Information Science & Technology.* 62:11, 2247-65

Szostak, R. (2004) *Classifying Science: Phenomena,
Data, Theory, Method, Practice,* Dordrecht: Springer.

Szostak, R. (2003) *A Schema for Unifying Human
Science: Interdisciplinary Perspectives on Culture*,
Selinsgrove PA: Susquehanna University Press.