# Doing a literature review in business and management

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# Doing a literature review in business and management

The importance of literature reviews

2 key challenges: fragmented field; undeveloped review methods

How to conduct a systematic AND critical review

6 principles

8 steps

5 common traps

# The importance of literature reviews

**Rank Order of Deficiencies Cited in Manuscripts (% of manuscripts reviewed)**

| Category | % of Manuscripts |
|---|---|
| Methodology | 74.3 |
| Significance / "so what" | 60.3 |
| Writing style | 58.4 |
| Literature review section of paper | 50.9 |
| Data analysis section of paper | 42.1 |
| Organization | 34.6 |
| Quality and rigor | 30.0 |
| Sampling | 29.2 |
| Conclusions section of paper | 27.6 |
| Discussions section of paper | 25.2 |
| Reference section of paper | 23.6 |
| Appropriateness of the paper for the journal | 16.1 |
| Failure to follow journal guidelines | 14.2 |
| Introduction section of paper | 14.2 |
| Manuscript is incomplete (sections missing) | 7.0 |
| Abstract section of the paper | 3.2 |
| Paper plagiarized or published elsewhere | .8 |

- McKercher et al (2007) 'Why referees reject manuscripts'

| Literature Review | |
|---|---|
| Issue | % of manuscripts |
| Failure to place the study in a broader context | 25.7 |
| Failure to establish theoretical framework, if needed | 12.6 |
| Old and/or outdated sources | 8.3 |
| No critical evaluation of the literature | 5.9 |
| Literature review not relevant to study | 4.3 |
| Poor referencing | 3.8 |
| Did not cite key sources | 3.2 |
| Too short or too long | 1.9 |
| Repetitive | .8 |
| Reference stacking (too many references for too few points being made) | .3 |
| Plagiarism | .3 |
| Contradictory—the literature review argues against itself | .3 |

McKercher et al (2007) 'Why referees reject manuscripts'

# The importance of literature reviews

- Stronger focus on theoretical framing / theory development
- High impact journals that focus solely on reviews (IJMR, AoM Annals, AMR)
- Literature review papers are often highly cited
- Evidence-based practice, commissioned reviews
- MSc dissertations based solely on a literature review (a project on the literature)
- Advances in technologies – making it more important to keep up-to-date

# The importance of literature reviews

The foundations upon which your thesis is based, your data will be analysed and your discussion/conclusions presented.

Photo courtesy of ©iStockphoto.com/GavinD

# Join a conversation
(Huff 1999)

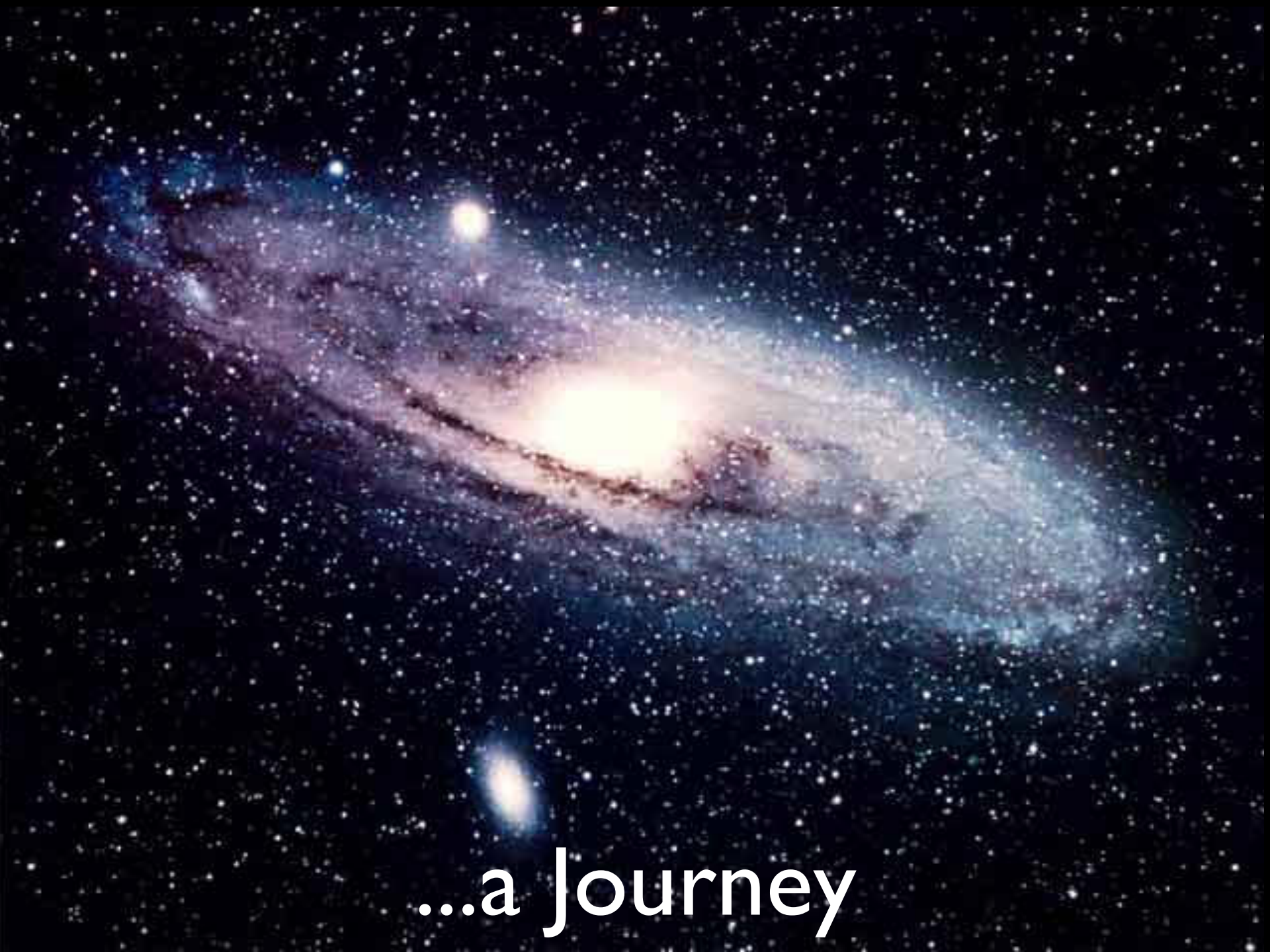
Who (individuals/authors/ papers/books) do I want to talk to?

What are they talking about as I arrive?

What are the most interesting things I have to add?

How do I introduce myself?

Photo courtesy of ©iStockphoto.com/qingwa

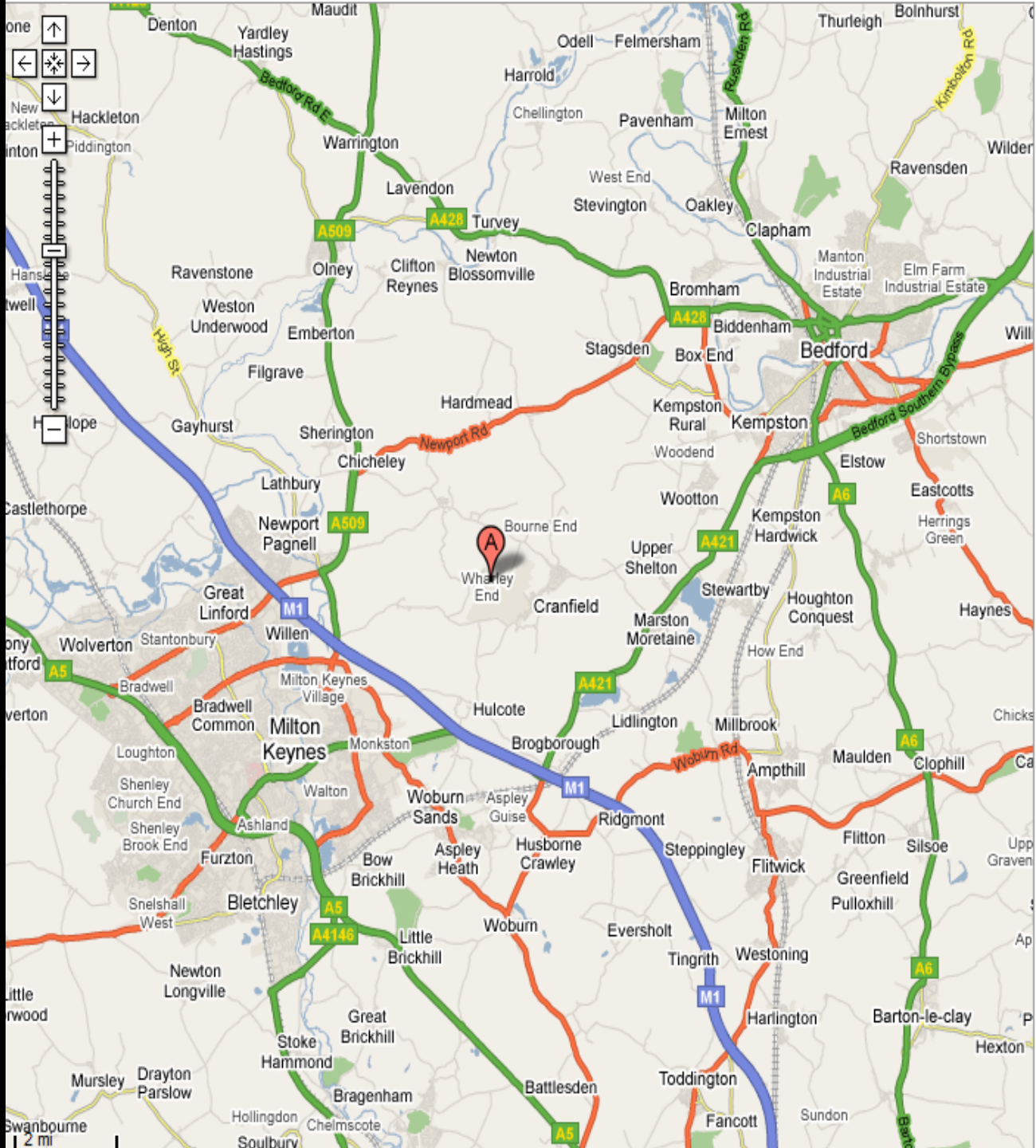

...a Journey

Business and management research

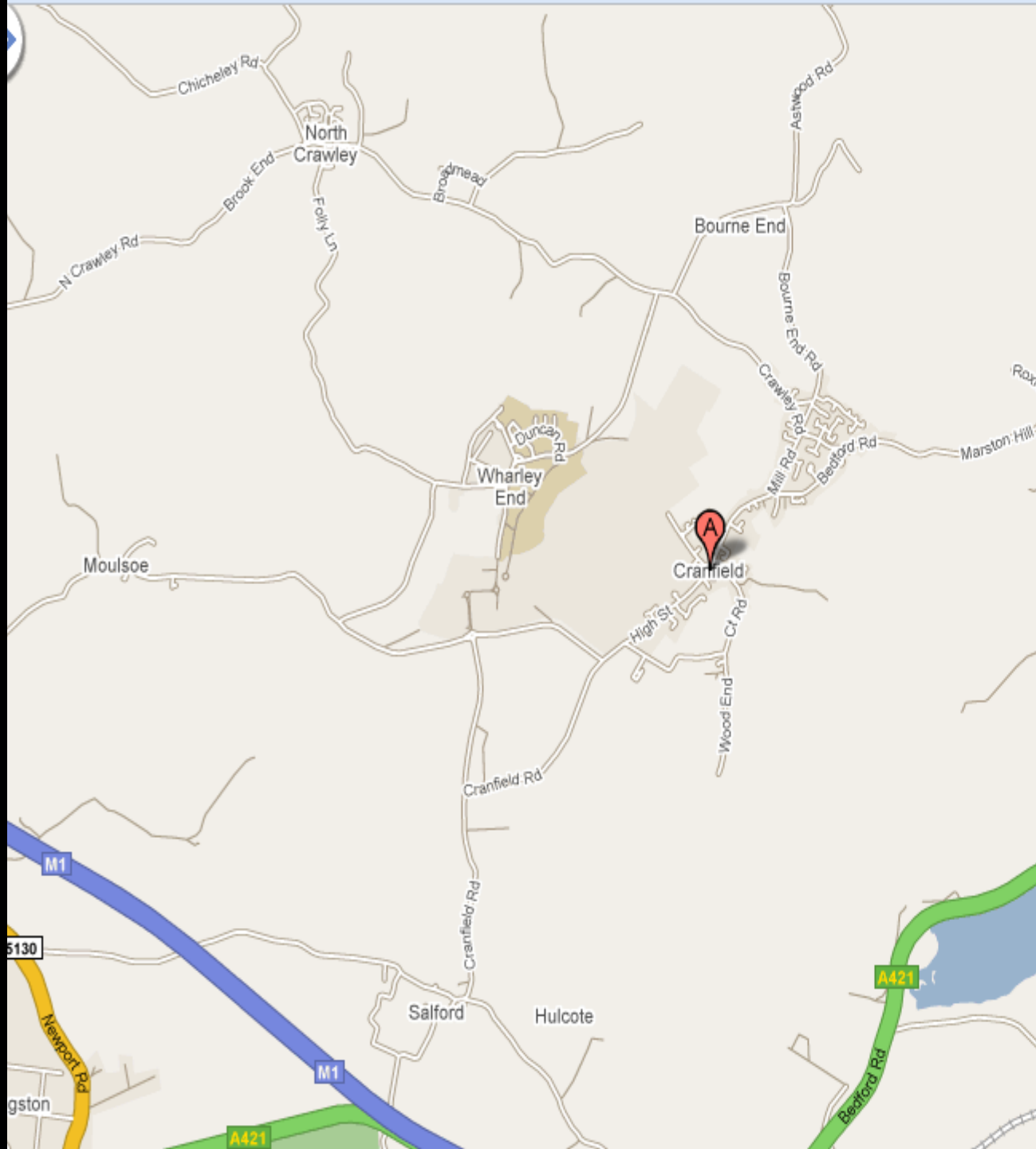
Learning and change in extreme contexts (mapping the field)

Scoping Study – the landscape, seminal studies (cities) and connections between them (main roads)

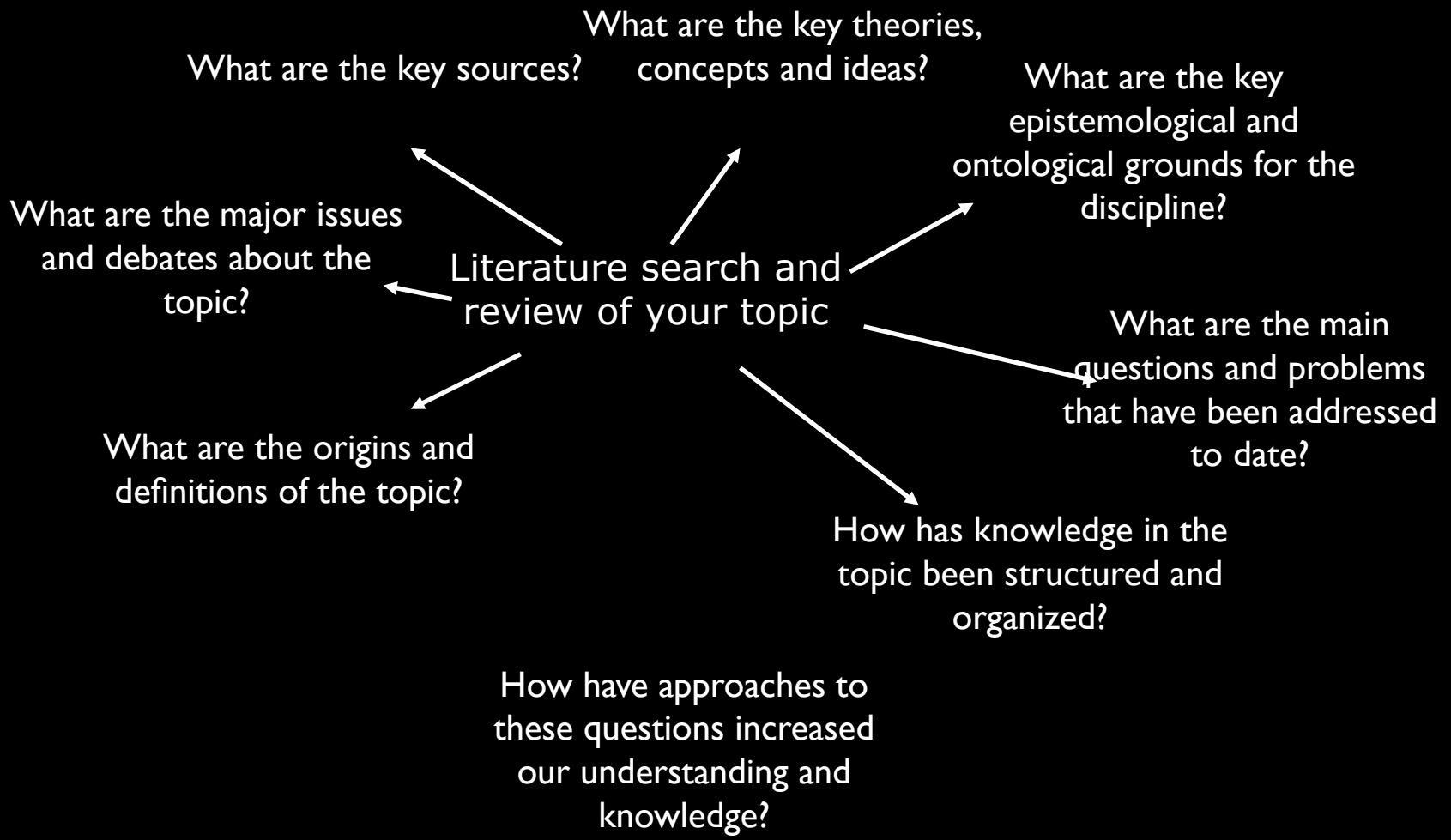
Systematic review – all of the papers (towns) within a defined area and the connections between them (roads)



Final contribution – typically 4 or 5 researchers (villages) in a very tightly defined area



# Literature review some key questions (adapted from Hart 1998)



# Fragmented field

Hard  Soft

Agreement/disagreement on problem type

Methodological unity/methodological pluralism

Pure  Applied

Not/concerned with practical application

Knowing what/knowing how

Convergent  Divergent

Shared/fragmented ideologies and values

Well defined/ragged boundaries

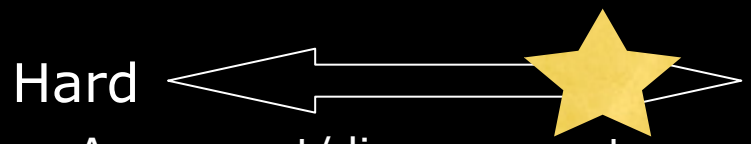
Urban  Rural

Narrow/wide area of study

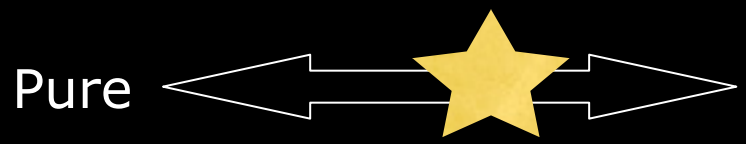
High/low people to problem ratio

Becher, A, (1989), Academic Tribes and Territories: Intellectual Enquiry and the Cultures of Disciplines, The Society for Research into Higher Education and the Open University Press, Milton Keynes.

# Fragmented field

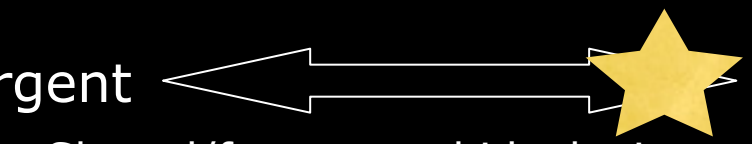



Agreement/disagreement on problem type
Methodological unity/methodological pluralism

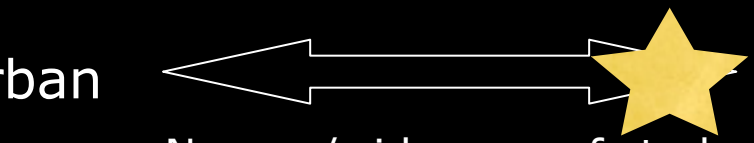



Not/concerned with practical application
Knowing what/knowing how

Fragmentation of content and method




Shared/fragmented ideologies and values
Well defined/ragged boundaries




Narrow/wide area of study
High/low people to problem ratio

Fragmentation of research community

Becher, A, (1989), Academic Tribes and Territories: Intellectual Enquiry and the Cultures of Disciplines, The Society for Research into Higher Education and the Open University Press, Milton Keynes.

The nature of the field...

'...makes it tough to know what we know, especially as specialization spawns research communities that often don't and sometimes can't talk with each other. Organizational researchers commonly adopt positions regarding management practices and organizational decisions for which no accumulation of evidence exists, or where at least some of the evidence is at odds'

Rousseau et al (2010)

# Undeveloped review methods

How many people here have had training in reviewing literature?

Are we really "standing on the shoulders of giants"?

Do you recognize these sort of unqualified statements?

"Previous studies have shown that…"

"It has been demonstrated that…"

But how many studies? Demonstrated how? Did other studies find something else?

Very few systematic reviews in management

# Undeveloped review methods

Have you read a literature that was...

"...just like the essays you used to write as a [undergraduate or Masters] student? You would browse through the indexes of books and journals until you came across a paragraph that looked relevant, and copied it out. If anything you found did not fit in with the theory you were proposing, you left it out. This, more or less, constitutes the methodology of the journalistic review-an overview of primary studies which have not been identified or analysed in a systematic way"

- (Greenhalgh, 1997: 672)

# How to conduct a systematic AND critical review

"A review of the evidence on a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant primary research, and to extract and analyse data from the studies that are included in the review"

NHS Centre for Reviews and Dissemination, 2001

A reviewer's **critical** account designed to **convince** a particular **audience** about what published (and possibly also unpublished) theory, research, practice or policy texts indicate is and what is not known about one or more questions framed by the reviewer.

Poulson and Wallace, 2004: 25

# How to conduct a systematic AND critical review

"….you are first like a detective finding the evidence then a the lawyer arguing the case."

(P1) **Focused**

- be clear about the scope/boundaries of the review
- formulate clear review questions
- make extensive efforts to find ALL the relevant literature

(P2) **Transparent**

- follow an appropriate (but not rigid) system
- explain in detail how the review was conducted
- justify the choices that you have made

## (P3) **Conclusive**

- aim to make reasonably clear conclusions about what we do and do not know (nb. finding an absence of evidence is equally important as finding “evidence”)
- provide a link between the evidence and any claims that you make
- present the evidence so that the reader can draw their own conclusions - e.g. tables; appendices

# (P4) **Reflective**

- a mind-set that is underpinned by a sense of humility and an attitude of 'polite doubt' (Cotterell)
- be mindful of how your values and beliefs influence the review
  - "...whilst it is possible to adopt a relatively impartial or neutral position to reviewing you will not be able to assume an unbiased or wholly objective one. Even attempting to be neutral implies valuing the stance of neutrality!" (Wallace)
- surface and explore the assumptions held by the authors of the texts that you read and taken-as-givens within your field

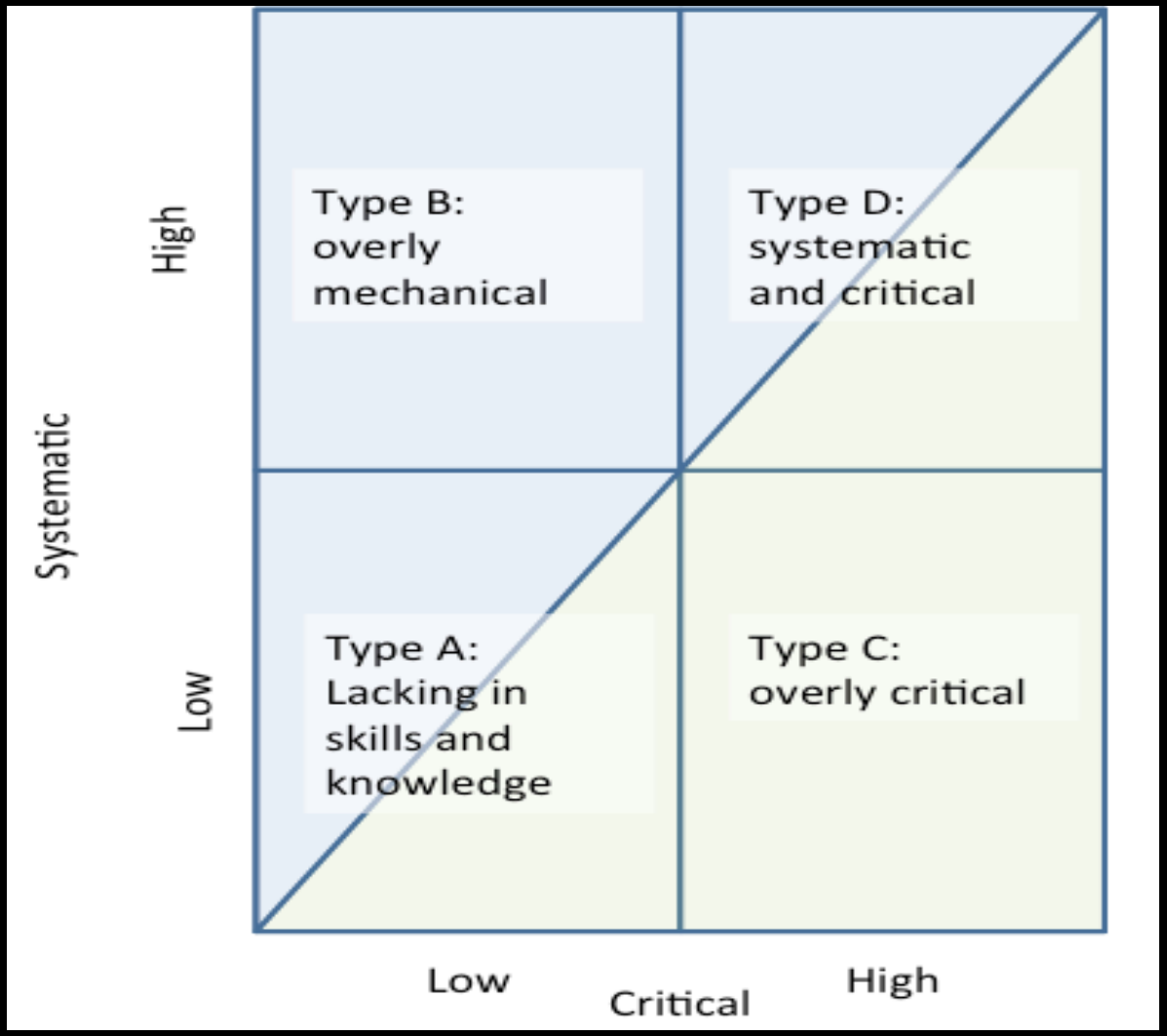
## (P6) **Convincing**

- recognise and decipher the arguments in the papers that you read
- develop a point of view or ‘position’ and offer reasons (evidence/justifications) to support the position
- reviews often have one main argument that may have a number of contributing arguments that are structured into ‘line of reasoning’ or the ‘storyline’.

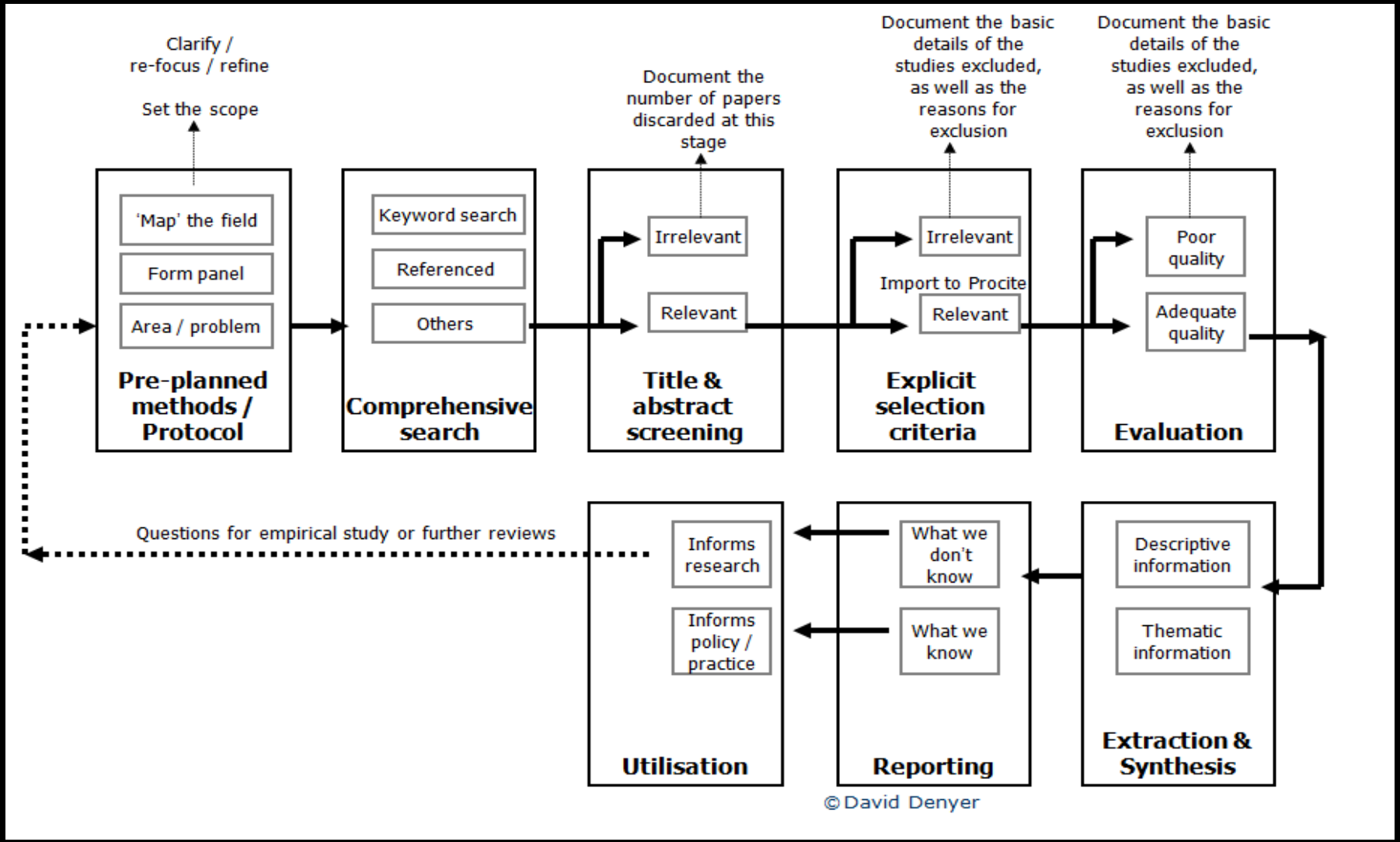
# (P6) **Interesting**

- "The first criterion by which people judge anything they encounter, even before deciding whether it is true or false, is whether it is interesting or boring." Murray Davis (1999: 245)
- look at things in a new way, shed fresh light on old texts
- reveal previously unnoticed connections between ideas
- point out things that are counterintuitive or challenge the assumptions held by your audience.

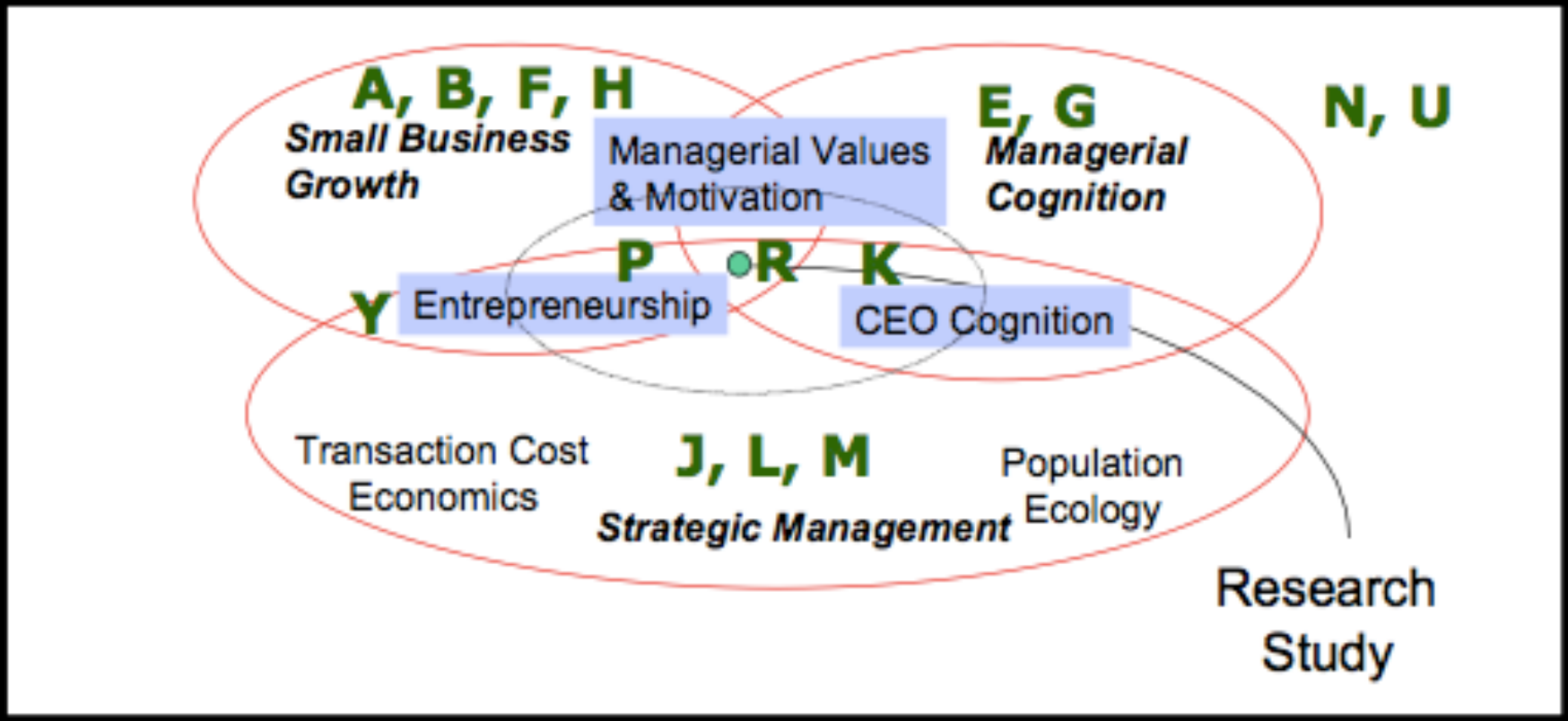
# Finding an appropriate balance



# 8 key steps


Clarify / re-focus / refine
Set the scope
'Map' the field
Form panel
Area / problem
Pre-planned methods / Protocol
Keyword search
Referenced
Others
Comprehensive search
Document the number of papers discarded at this stage
Irrelevant
Relevant
Title & abstract screening
Document the basic details of the studies excluded, as well as the reasons for exclusion
Irrelevant
Import to Procite
Relevant
Explicit selection criteria
Document the basic details of the studies excluded, as well as the reasons for exclusion
Poor quality
Adequate quality
Evaluation
Descriptive information
Thematic information
Extraction & Synthesis
What we don't know
What we know
Reporting
Informs research
Informs policy / practice
Utilisation
Questions for empirical study or further reviews
© David Denyer

# Step 1a: Mapping the field



# Step 1b: Scoping study

- ...a process of going up alleys to see if they are blind
  - anonymous

Photo courtesy of ©iStockphoto.com/carterdayne

# Step 1c Forming the review panel

- Advisory groups or panels are formed to provide the reviewer with guidance and support.
- The review panel may be consulted individually or as a group at key points throughout the review.
- The group should include subject experts from academia and practice.
- Where possibility the review panel should be diverse and able to offer different perspectives and expertise.
  - Academics working in the area
  - Practitioners working in the field
  - Librarians / information scientists

# Step 1d: review questions / objectives

"The question addressed by the systematic review needs to be defined very precisely since the reviewer must make a dichotomous (yes/no) decision as to whether each potentially relevant paper will be included or, alternatively rejected" Trisha Greenhalgh

Formulating review questions is similar to preparing research questions for primary research.

CIMO - context, intervention, mechanism, outcome

What general area or topic do you want to focus on? Why?

What specific review question will you address? Is it specific enough?

Where is this question from? Why is it important or interesting?

Who is the review for? Practitioners? Researchers? Both?

What type of literature review do you want to do?

## Purpose

What are the association between networking and innovation and what is the nature of the relationship?

Where does the UK stands internationally in terms of business-to-business networking and its contribution to innovation, with particular reference and comparisons to and between the UK, USA, France, Germany and Japan?

## Objectives

The overall objective of this review is to explore business-to-business networking activity in the UK. This can be broken down into a number of questions:

How do formal institutional mechanisms aimed at promoting business to business networking activity operate, for example: mediated by professional associations; incubators; clusters et cetera?

To what extent do informal channels of networking lead to innovation, for example: communities of practice; mentoring schemes; knowledge brokerage; and entrepreneurial networks et cetera?

How is networking behaviour successfully translated into tangible outcomes specifically related to innovation; including a focus on different forms of innovation, such as product and process innovation?

What examples exist of network failure and inertia militating against innovation occurring within networks and explore why networks fail?

# Step 2: Comprehensive search

Information Sources

Journals not cited in the databases

Conference papers

Books

Working papers or unpublished papers

Documents on the internet

Personal requests to knowledgeable researchers and/or practitioners

Reports from relevant institutions: companies, public bodies etc

## Grouping keywords and applying search conventions

Simple operators include:

truncation characters – '*', '?'; e.g. guideline*; organi*ation,

Word association – 'w' or 'near' e.g. urban(w)renewal; social(near)policy

Boolean Logic includes:

OR e.g. guideline* OR guidance searches for either term in a document

AND e.g. guideline* AND impact* searches for both terms in a document

AND NOT e.g. guideline* AND NOT regulation* searches for documents which contain the term guidelines but not regulations

By combining Boolean operators with parentheses complex searches can be built up:-

Guideline* AND (impact OR introduct*) AND NOT regulation*

This search will find all documents which include the terms guidelines and impact or introduction but not any document which has these terms and regulation

Caution! Not all databases use the same conventions

e.g.

The following list of keywords captures essential concepts to conduct the review:

| 1a - Best practices (general) | 1b - Best practices (specific) | 2 Implementation |
|---|---|---|
| (best practice? OR management fashion? OR management fad? OR process innovation? OR good practice? OR promising practice?) | (Kai?en OR TQM OR total quality management OR QM OR quality management OR EFQM OR BPR OR Business Process Reengineering OR high commitment work practice? OR High performance work practice? OR JIT OR just in time OR lean manufacturing OR Investors In People OR IIP OR empowerment) | (Adoption OR Adaptation OR Implement? OR Use) |
| **3 - Performance** | **4 - Hurdles** | **5 - Culture** |
| (performance OR success? OR effectiveness OR impact? OR competitiveness OR failure? OR benefits OR advantages OR disadvantages OR profit? OR productivity OR cost?) | (Resistance OR hurdle? OR barrie? OR obstacle? OR antecedent? OR predictor? OR factor?) | (Culture OR assimilation OR absorption) |
| **6- Emergence** | **7- Perception** | **8- Absorptive capacity** |
| (Emergence OR evolution OR development) | (perception OR relevance) | (absorptive capacity) |

e.g.

The following list of keywords captures essential concepts to conduct the review:

| | | |
|---|---|---|
| Innovat*AND network* | Innovat*AND network*AND institutional (w) theory OR actor (w) network OR social (w) network | Diffusion AND knowledge AND network* |
| Innovat*AND network* AND UK | Innovat* AND network* AND incubators OR clusters | Innovat*AND mentors OR knowledge (w) brokers OR communities (w) practice |
| Innovat* AND network* AND learn* OR collaborat* OR trust OR absorptive (w) capacity | Innovat* AND network* AND ties OR dynamic* OR isomorphism OR knowledge (w) spill* | Innovat* AND collaborat* OR partner* |
| Network* AND innovat* AND fail* | Network* AND product (w) development OR invent* OR process (w) change | Network* AND innovat* OR effect* OR collapse OR dysfunction OR disintegrate |
| *Other key words for search strings based on 2400 articles in SCI:* | *Complexity; embeddedness; entrepreneur*; knowledge; policy; research (w) development; social (w) capital* | *Relation*; co-operation; agglomeration; alliance*; proximity; intermediary; interaction* |

# Step 3: Study selection

- Once a body of evidence has been collated….
- How relevant is this to what we are seeking to understand or decide?
- How representative is this of the population that concerns us?
- How reliable, how well-founded theoretically, empirically is it?

Solesbury, 2001

- e.g. Criteria for including papers, based on abstracts (first filter):

Located within the supply chain (or net or web) field consisting of supply chain dynamics, complexity, behaviour structure, design, risk, resilience, vulnerability strategies, uncertainty, flexibility and agility.

Refers to complex systems concepts as co-evolution, emergence, self-organisation, evolutionary stable strategy, chaos, uncertainty, adaptability and responsiveness.

Refers to difference modelling tools and techniques as agent based approaches, system dynamics, systems thinking, systems engineering, complex systems, CAS, mainly in the context of supply chains or networks.

Refers to different modeling aspects of complex systems within organizational contexts.

e.g. Criteria for including papers, based on full paper:

Conceptual/Modelling Papers must contain:

- discussion of the theories, models or conceptual frameworks used to guide the development of a practical design algorithm for understanding supply network behavioural and structural dynamics. They should not be mere discussions of cost based optimization approaches or systems dynamics approaches assuming deterministic structures and optimizing flows but should contain the dynamics of interactions between partners, negotiation mechanisms, supply chain structural evolutions, uncertainty modelling issues etc.
- explicit consideration of a theory, model or conceptual framework to support this.
- construction of a framework or model for linking different concepts (e.g., complex systems and supply chains).
- a theoretical conceptual review of ideas about earlier work (e.g., different modelling techniques, qualitative or quantitative).
- a purpose/goal (which may be identifying a gap/ demonstrating a new ideal application of existing ideas in new field etc.), 'why you are doing what you are doing?'
- for complex systems modelling papers, they must present some relevant concept in relation to disruptions in networks or interaction networks

Empirical Papers had to include:

- experiments or cases or interventions designed to enhance the understanding of the impact of different complexity concepts on the supply chains, dynamics .of supply chain behaviour, impact of structure on strategy and vice versa.
- what impacts the evolution or emergence of supply chain structures, risk or vulnerability of the supply network etc. . reviews of above
- what are the factors behind complexity of supply chains, their dynamics, the need for long term strategies, need for resilience . what are the inhibitors of resilience

Methodological Papers had to be:

- clear and consistent in their initial assumptions, field of study, sample etc and also in their limitations.
- can be conceptual or empirical or independent paper
- research design is sound and concepts are well grounded from theories.
- the results obtained make sense with respect to assumptions and conceptual backgrounds, if not, then explanation of deviance.
- review of methodologies earlier adopted in addressing same question

Checklist

# Step 3: Study evaluation

Was an explicit account of the theoretical framework given?

Is there a succinct statement of objectives or research questions?

Is there a clear description of the context?

How was the sample chosen, is it adequate?

Was there a clear description of data collection methods, were they appropriate?

Was a there clear description of data analysis methods, were they appropriate?

How does the research move from the raw data (numbers, quotations or examples), to an analysis and interpretation of the meaning and significance of it?

# Top tip

Identify 3-5 top journals in your field
On the journal website – locate the ‘guidance for reviewers’ (NB. Not authors)
Use these to create your quality criteria

e.g.

| Elements to Consider | Level | | | | |
|---|---|---|---|---|---|
| | 0-Absence | 1-Low | 2-Medium | 3-High | Not Applicable |
| Contribution | The article does not provide enough information to assess this criteria | The paper adds little to the body of knowledge in this area | Contribution to knowledge is trivial in importance and significance | Significant addition to current knowledge; fill an important theory gap | This element is not applicable to this paper |
| Theory | The article does not provide enough information to assess this criteria | Literature review is inadequate; Failure to motivate study with practical implications; No underlying economic story | Theoretical base is acceptable; Having practical rationales for study in some extent | Excellent review of prior literature; Strong theoretical basis; Study has important implications for practitioners | This element is not applicable to this paper |
| Methodology | The article does not provide enough information to assess this criteria | The idea of study is poorly executed; Inappropriate quantitative methods; Failure to justify proxies for economic variables | Justified research design; Acceptable proxies for economic variables; The idea of study is not fully executed | Research design adequately examine the theoretical argument; Proxies are adequately defined | This element is not applicable to this paper |
| Data Analysis | The article does not provide enough information to assess this criteria | Data sample insufficiency; Weak connection between statistical results and economic story; Inconclusive statistics | Appropriate data sample; Statistical results relates to economic story; Adequate statistics but inadequate explanation | Adequate data sample; Statistical results support theoretical arguments; Well explained statistics; Include limitation analysis | This element is not applicable to this paper |

# Step 3: Extraction, analysis and synthesis

Analysis,

…is the job of systematically breaking down something into its constituent parts and describing how they relate to each other – it is not random dissection but a methodological examination.

The aim is to extract key ideas, theories, concepts [arguments] and methodological assumptions from the literature.

Synthesis,

…is the act of making connections between the parts identified in analysis. It is about recasting the information into a new or different arrangement. That arrangement should show connections and patterns that have not been produced previously.

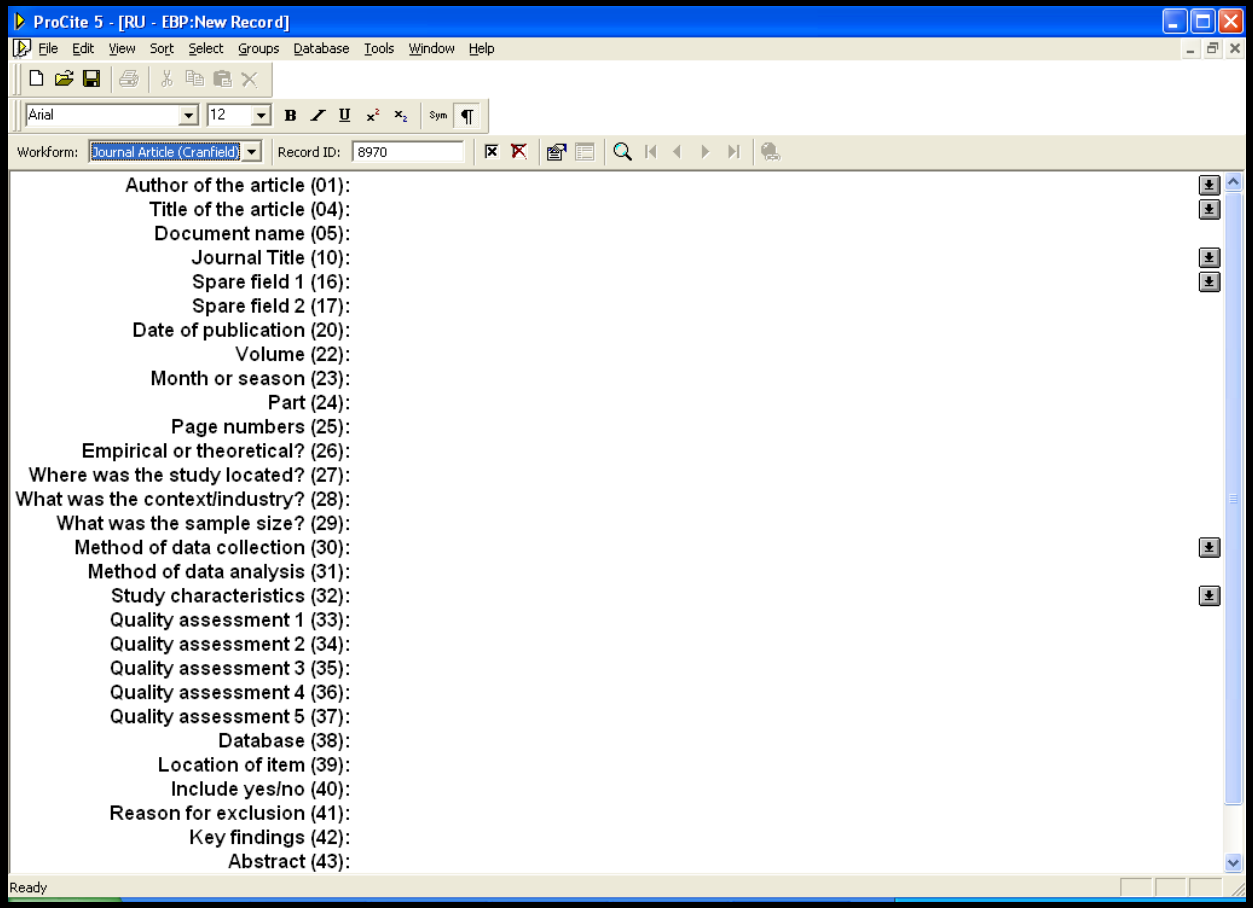
- Citation information (e.g title, author, publication details)
- Detailed descriptive information (e.g country, context, population characteristics, location etc)
- Methodological information (sample and methods used)
- Raw data on which to conduct further statistical analysis
- Key findings, theories, emerging themes, perspectives, concepts etc

e.g.

This data extraction tool was developed for a literature review on the attitudes and aspirations of older people (Boaz, Hayden and Bernard, 1999).

| **Basic data extraction tool** | |
|---|---|
| Details of publication<br><br>Author<br>Title<br>Source (journal, conference etc.)<br>Year/volume/pages/country of origin<br>Institutional affiliation | |
| Research question<br><br>Aim | |
| Study design<br><br>When was the fieldwork conducted? | |
| Participation in the study<br><br>Target population<br>Exclusion criteria<br>Recruitment procedures<br>Characteristics of participants (age, sex, social class, ethnicity, geographical location, health status, income status, other information) | |
| Research tools<br><br>What were the research tools used?<br>Where were they piloted?<br>Was a specific attitude scale used?<br>Which? | |
| Theory<br><br>Was any theory referred to in the research?<br>Give details | |
| Ethics<br><br>Was ethics committee approval obtained? | |
| Analysis<br><br>Statistical techniques used<br>Qualitative analysis techniques used<br>Computer analysis tools used | |
| Reviewers decision<br><br>Is the study methodologically sound (see decision tools)?<br>Is it relevant to the review topic?<br>Is it to be included? | |

e.g.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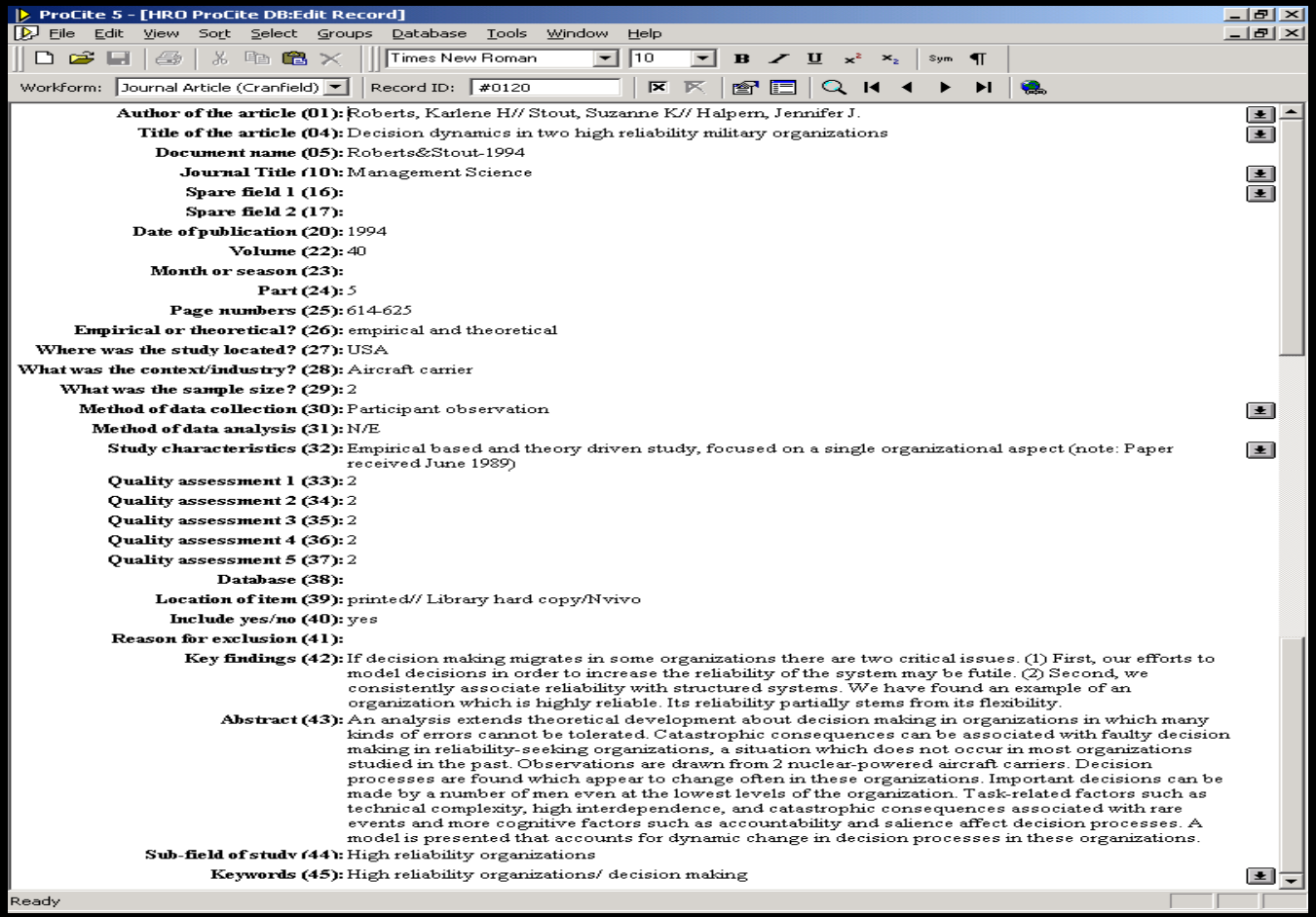
Author of the article (01):
Title of the article (04):
Document name (05):
Journal Title (10):
Spare field 1 (16):
Spare field 2 (17):
Date of publication (20):
Volume (22):
Month or season (23):
Part (24):
Page numbers (25):
Empirical or theoretical? (26):
Where was the study located? (27):
What was the context/industry? (28):
What was the sample size? (29):
Method of data collection (30):
Method of data analysis (31):
Study characteristics (32):
Quality assessment 1 (33):
Quality assessment 2 (34):
Quality assessment 3 (35):
Quality assessment 4 (36):
Quality assessment 5 (37):
Database (38):
Location of item (39):
Include yes/no (40):
Reason for exclusion (41):
Key findings (42):
Abstract (43):
Ready

e.g.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Times New Roman 10
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Author of the article (01): Roberts, Karlene H// Stout, Suzanne K// Halpern, Jennifer J.
Title of the article (04): Decision dynamics in two high reliability military organizations
Document name (05): Roberts&Stout-1994
Journal Title (10): Management Science
Spare field 1 (16):
Spare field 2 (17):
Date of publication (20): 1994
Volume (22): 40
Month or season (23):
Part (24): 5
Page numbers (25): 614-625
Empirical or theoretical? (26): empirical and theoretical
Where was the study located? (27): USA
What was the context/industry? (28): Aircraft carrier
What was the sample size? (29): 2
Method of data collection (30): Participant observation
Method of data analysis (31): N/E
Study characteristics (32): Empirical based and theory driven study, focused on a single organizational aspect (note: Paper received June 1989)
Quality assessment 1 (33): 2
Quality assessment 2 (34): 2
Quality assessment 3 (35): 2
Quality assessment 4 (36): 2
Quality assessment 5 (37): 2
Database (38):
Location of item (39): printed// Library hard copy/Nvivo
Include yes/no (40): yes
Reason for exclusion (41):
Key findings (42): If decision making migrates in some organizations there are two critical issues. (1) First, our efforts to model decisions in order to increase the reliability of the system may be futile. (2) Second, we consistently associate reliability with structured systems. We have found an example of an organization which is highly reliable. Its reliability partially stems from its flexibility.
Abstract (43): An analysis extends theoretical development about decision making in organizations in which many kinds of errors cannot be tolerated. Catastrophic consequences can be associated with faulty decision making in reliability-seeking organizations, a situation which does not occur in most organizations studied in the past. Observations are drawn from 2 nuclear-powered aircraft carriers. Decision processes are found which appear to change often in these organizations. Important decisions can be made by a number of men even at the lowest levels of the organization. Task-related factors such as technical complexity, high interdependence, and catastrophic consequences associated with rare events and more cognitive factors such as accountability and salience affect decision processes. A model is presented that accounts for dynamic change in decision processes in these organizations.
Sub-field of study (44): High reliability organizations
Keywords (45): High reliability organizations/ decision making
Ready

e.g.

| Author | Data used in Study | Dates | Location of Study | Summary of empirical Findings |
|---|---|---|---|---|
| ***Ahire & Ravichan-dran*** | 407 questionnaires – automobile parts' suppliers industry. | 2001 | USA | Use a Likert scale to test the importance of several factors contributing to quality improvements, product quality, and process quality. The technical training of employees scored 5.10 out of 7 on Likert scale and is the second most important factor. |
| ***Dixon, Arnold, Heineke, Kim, Mulligan*** | Review of 23 BPR projects (15 primary data + 8 secondary data). | 1994 | USA | Reports that extensive employee training efforts were observed in 2/3 of the cases. Training took place prior to and during implementation. In one case, 5% of the total operating budget was spent on training. |
| ***Guima-raes*** | Postal survey of an association member involved with BPR – 135 questionnaires. | 1999 | USA | The item "Re-educate and retrain workers on BPR actually is" score 3.21 on a 5 point importance scale.<br>The item is correlated significantly at the 0.1 level with the fact that project objectives were attained (Pearson correlation coefficient: 0.29) but shows no statistically significant correlation with organisational performance. |
| ***Kassicieh & Yourtsone*** | Postal survey of 111 manufacturing and service organisations. | 1998 | USA (New Mexico) | Use regression analysis to test at the 0.1 level the significance of "extent of training" on three dependent variables, in a quality adoption context.<br>Conclusion is that extent of training is a variable significant correlated with cost reduction and increases in profits, but not with employee morale. |
| ***Mc Lachlin*** | Case base research | 1997 | Canada | Finds through pattern matching that 3 |

e.g.

| Author | Data used in Study | Dates | Location of Study | Summary of empirical Findings Institutional Push |
|---|---|---|---|---|
| **Kumar & Chandra** | Postal survey of 37 cross-sectors organisations. | 2001 | USA | *What are the reasons for initiation of benchmarking in your organisation for the past 2 years?*<br>Increased profitability (67%), Maintain competitive advantage (67%), increase competitive advantage (67%), learn other processes (3%) |
| **Newell, Swan, & Robertson** | Postal survey (1277) and interviews (80) of firms belonging to professional operations management association. Focuses on the adoption of BPR. | 1998 | UK (733) France (170) Netherlands (198) Sweden (176) | Survey shows statistically significant differences in terms of institutional involvement and networking for adopters of TQM.<br>*Mean networking score for adopters and non adopters on the various networks used to find out about the latest ideas* |

| | Non-adopters | Adopters | t-value |
|---|---|---|---|
| Colleague networks | 4.19 | 4.35 | 2.53(p=0.05) |
| Professional networks | 2.27 | 2.18 | NS |
| Supply chain networks | 3.39 | 3.39 | NS |
| Consultant/ vendors network | 2.03 | 2.26 | 2.25 (p=0.01) |
| Total contact with networks | 2.65 | 2.72 | NS |

(1 = 'never'; 6='daily')

*Mean networking score for adopters and non adopters on attendance at professional events*

| | Non-adopters | Adopters | t-value |
|---|---|---|---|
| Mean total events | 1.22 | 1.29 | 3.17(p=0.001) |
| Mean formal events | 1.23 | 1.31 | 3.12 (p=0.001) |
| Mean informal events | 1.19 | 1.27 | 2.75 (p=0.001) |

(1 = 'never in the last 12 months'; 3='attended more than 1 such event in the last 12 month')

e.g.

***Top Ten Journals Contributing to the Review***

| Rank | Journal | Field | A List Citations | First Stage Inclusion |
|---|---|---|---|---|
| 1 | Research Policy | Economic Geography | 20 | 43 |
| 2 | Journal of Business Venturing | Entrepreneurship and Small Business | 18 | 33 |
| 3 | Regional Studies | Regional and Economic Geography | 16 | 20 |
| 4 | Technovation | Technology Management | 12 | 29 |
| 5 | International Journal of Technology Management | Technology Management | 11 | 22 |
| 6 | Technology Analysis and Strategic Management | Strategic Management; Technology Management | 10 | 17 |
| 7 | Small Business Economics | Entrepreneurship | 7 | 11 |
| 8= | Journal of Product Innovation Management | Operations Management | 6 | 9 |
| 8= | Organization Studies | Organisational Behaviour | 6 | 9 |
| 8= | Strategic Management Journal | Strategic Management | 6 | 7 |

e.g.

***Papers Reviewed According to Year of Publication***

| Year | No. Publications | Year | No. Publications |
|---|---|---|---|
| 2003 | 16 | 1991 | 8 |
| 2002 | 25 | 1990 | 2 |
| 2001 | 12 | 1989 | 0 |
| 2000 | 23 | 1988 | 4 |
| 1999 | 17 | 1987 | 8 |
| 1998 | 11 | 1986 | 0 |
| 1997 | 13 | 1985 | 1 |
| 1996 | 9 | 1984 | 2 |
| 1995 | 10 | 1983 | 0 |
| 1994 | 8 | 1982 | 0 |
| 1993 | 6 | 1981 | 1 |
| 1992 | 3 | | |

e.g.

***Country Analysis of the Papers Reviewed***

| Country | No. of Papers (A List) | % of Sample |
|---|---|---|
| **United Kingdom** | **36** | **28.3%** |
| Wales | 2 | |
| Scotland | 2 | |
| **North America** | **35** | 27.6% |
| USA | 30 | **23.6%** |
| Canada | 5 | |
| **Europe** | **42** | 33.1% |
| Austria | 2 | |
| Belgium | 1 | |
| Denmark | 1 | |
| Finland | 3 | |
| France | 5 | **3.9%** |
| Germany | 14 | **11.0%** |
| Ireland | 2 | |
| Italy | 3 | |
| The Netherlands | 3 | |
| Spain | 2 | |
| Sweden | 4 | |
| Switzerland | 2 | |
| **Asia** | **11** | 8.7% |
| Japan | 9 | **7.1%** |
| Korea | 1 | |
| Taiwan | 1 | |
| **Other** | **3** | 2.4% |
| Australia | 1 | |
| Brazil | 1 | |
| Israel | 1 | |

e.g.

***Industrial Analysis of the Papers Reviewed***

| Industry | No. of Papers (A List) | % of Sample |
|---|---|---|
| **Primary Industries** | **4** | **5.7%** |
| Energy Industry | 1 | |
| Agriculture | 1 | |
| Oil and Gas | 2 | |
| **Manufacturing Industries** | **12** | **17.1%** |
| Automobile Component Industry | 3 | |
| Ceramics Industry | 1 | |
| Mechanical Engineering Industry | 2 | |
| Medical Equipment Industry | 3 | |
| Clothing Industry | 2 | |
| Packaging Machine Industry | 1 | |
| **Service Industries** | **2** | **2.9%** |
| Food Industry | 1 | |
| Financial Services Industry | 1 | |
| **High Technology Industries** | **52** | **74.3%** |
| Chemicals Industry | 6 | 8.6% |
| Plastics | 1 | |
| Petrochemicals | 1 | |
| Enzymes | 1 | |
| Defense Industries | 3 | 4.3% |
| Electronics (and related) | 23 | 32.9% |
| Software | 3 | |
| Semiconductors | 7 | |
| Robotics | 2 | |
| Home Automation | 1 | |
| Telecommunications | 3 | |
| Pharmaceutical Industries | 20 | 28.6% |
| Biotechnology | 11 | |
| Embryonic | 1 | |

# Trap 1. – a broad unfocused question

Does team-building work?

What is meant by ‘team’? And what is not included as a ‘team’?

What kind of teams?

In which particular contexts or settings?

What is ‘team building’? And what is not ‘team building’?

What does ‘work’ mean?

‘Work’ compared to any other team intervention? No intervention?

What outcomes are relevant?

What are the mechanisms, processes and theory which might account for possible effects of team building on outcomes?

What time periods are relevant for observing any possible effects?

What about possible negative effects or harm?

What types of data from what sorts of designs would in principle provide good quality, medium quality and poor quality evidence?

# Trap 2. – ‘it is all about database searching’

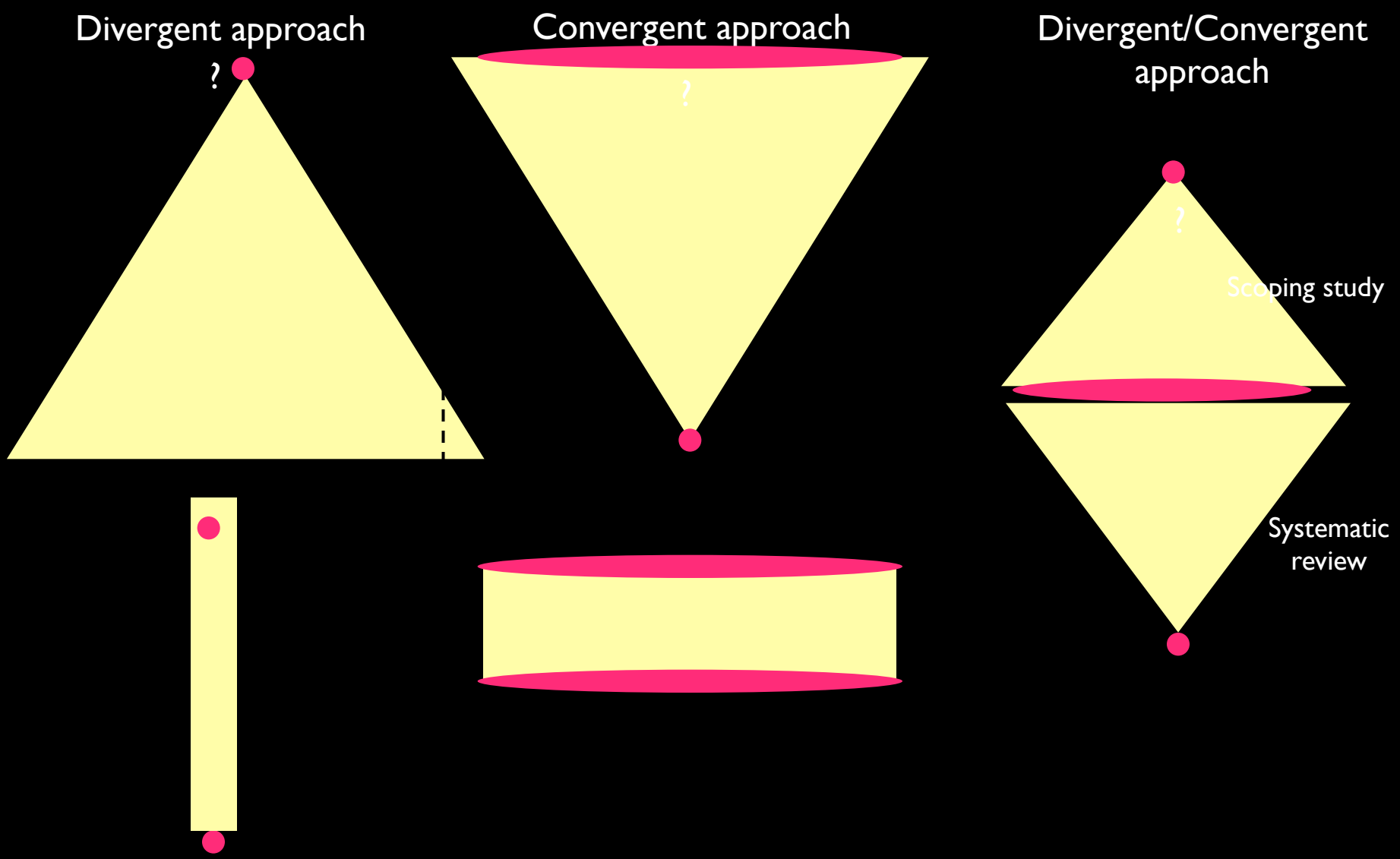
Greenhalgh and Peacock (2005)

Protocol driven search strategies (keywords) accounted for only 150 articles out of 495 relevant papers:

"systematic review of complex evidence cannot rely solely on predefined, protocol driven search strategies, no matter how many databases are searched. Strategies that might seem less efficient (such as browsing library shelves, asking colleagues, pursuing references that look interesting, and simply being alert to serendipitous discovery) may have a better yield per hour spent and are likely to identify important sources that would otherwise be missed."

Greenhalgh, T. and Peacock, R. (2005), Effectiveness and efficiency of search methods in systematic reviews of complex evidence: audit of primary sources. British Medical Journal. November 5; 331(7524): 1064–1065.

# Trap 3: lack of balance between depth and breadth



# Trap 4. - ‘gap’ filling

- What does a gap mean?
- NOT “No studies have researched X, in SMEs in Norway”
- All high quality reviews build on (or around) existing literature and…

(1)criticize it for being deficient in some way (e.g., for being incomplete, inadequate, inconclusive, or underdeveloped)

(2)identify and challenge its underlying assumptions

- …and based on that, formulate new and original research questions

# Trap 5: Sloppy review practices

- forgetting to document search process in sufficient detail making updating the review a significant challenge,
- failing to document the full citation information of relevant articles so that creating a reference list becomes a painstaking job,
- incorrectly referencing quotes or figures taken from papers so that later you have no idea where they came from,
- creating a disordered system for storing electronic (pdf) versions or hard copies of articles making it difficult to later find relevant papers
- producing inadequate notes on a paper so that when it comes to writing the literature review you cannot remember what it was about the paper that was important and are required to read the whole paper again.

# Further information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