

Approaches to producing syntheses for managers and policy makers: Two illustrative cases in primary healthcare

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"Evaluating Primary Healthcare Renewal"
Invitational workshop
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Plan of the presentation

1. Synthesis

- definition, forms and main issues

2. Illustrative cases of how those issues have been dealt with:

- the policy synthesis on primary healthcare (CHSRF, Nov. 2003)
- the research collective on primary healthcare in Québec (Feb. 2005)

3. Conclusion

Synthesis

Definition

An evaluation or analysis of research evidence and expert opinion on a specific topic to help decision and policy making in the context of knowledge exchange activities between researchers and decision makers

(Adapted from CHSRF)

Forms

1. Systematic review of the literature
 - quantitative
 - qualitative
2. Expert opinions
 - advice seeking and consensus reaching techniques (nominal and focus groups, DELPHI)
3. Research collective

Main issues related to syntheses

1. Conceptualizing, defining and operationalizing complex interventions
2. Integrating quantitative/qualitative studies and assessing strength of evidence
3. Integrating expert opinions

Main issues related to syntheses (cont'd)

4. Taking into account decision makers' views, opinions and expectations
5. Producing timely results on time \Rightarrow timeliness and timing
6. Showing results in a concise yet understandable form

Issue 1

Conceptualizing, defining, and operationalizing complex interventions

Basic facts

1. Modes of organization, programmes, and interventions in health care are complex
2. From a statistical viewpoint it is possible (and preferable) to isolate the specific effect of each variable that characterizes an organization
3. In the real world, an organization forms an indivisible whole and a decision maker cannot act on one variable at a time, keeping all others constant

Gréas 1

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et l'organisation des services de santé de 1^{re} ligne

One possible solution: The configurational approach

“We use the term organizational configuration to denote any multidimensional constellation of conceptually distinct characteristics that commonly occur together”

Meyer, Tsui and Hinings, 1993

Issue 2

The qualitative/quantitative debate

Two polar positions

1. The purists
 - quantitative
 - qualitative
2. The pragmatists
(hybrids)

The role of qualitative research

1. Enhancement model
(complementary and subsidiary role)
2. Difference model
(independent and distinctive role)

Popey and William in Mary Dixon-Woods et al. "Integrative approaches to qualitative and quantitative evidence", NHS, Health Development Agency, 2004

A pragmatic position

“Certainly there are epistemological and practical differences between research traditions, but this in itself is not a reason for inaction”

Kelly M. Foreword to Mary Dixon-Woods et al. op. cit.

Issue 3

Integrating expert opinions

How to do it?

What weight to attribute?

How to integrate with empirical data?

Issue 4

Taking into account decision makers' views, opinions and expectations

How to collect this information?

How to incorporate it into syntheses?

How to manage the process?

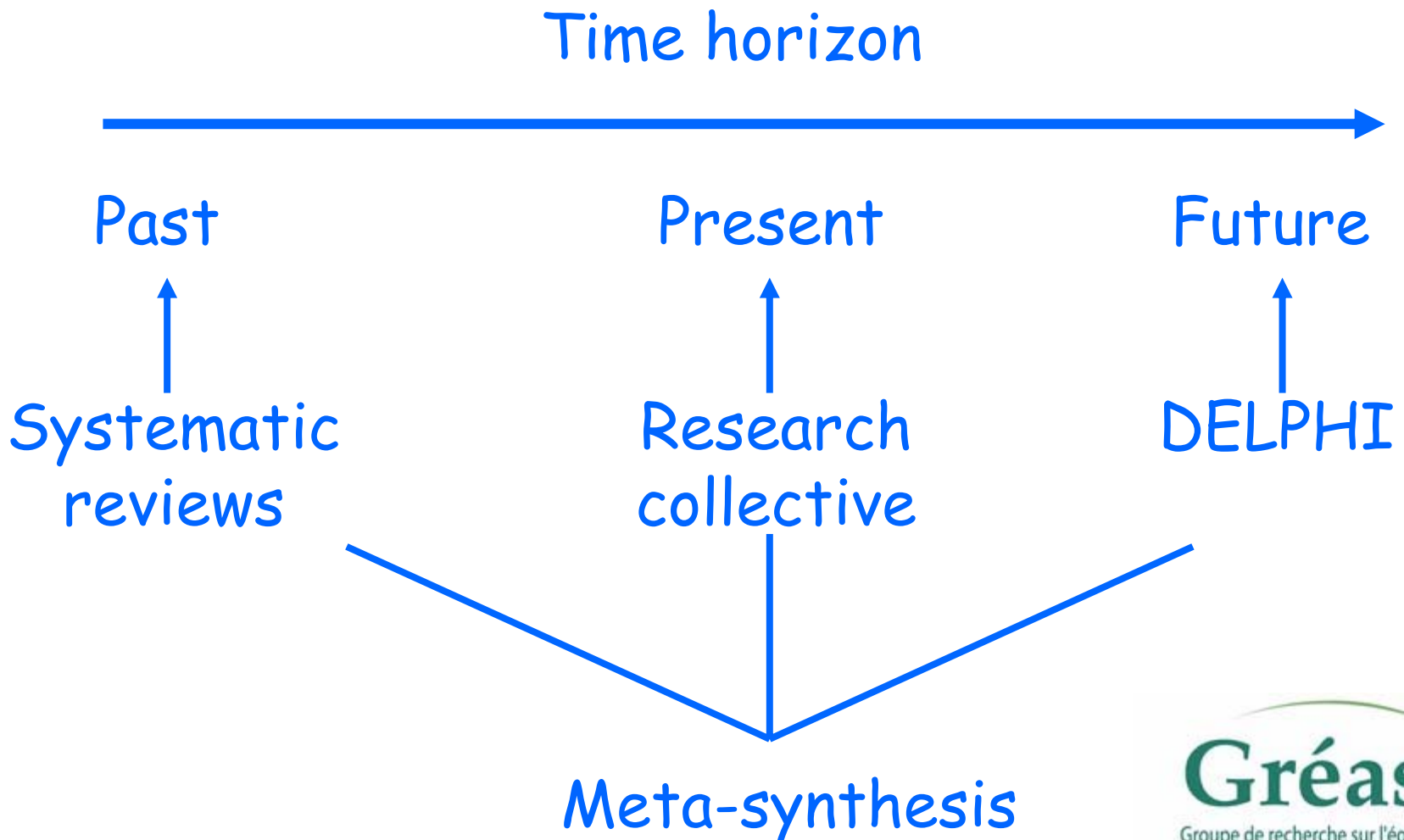
Issue 5

Producing timely results on time

How to increase timeliness

1. Theoretical inference
2. Consistency across different contexts
3. Triangulation of data reported in the past with data extrapolated to the future (DELPHI)

Timeliness of research synthesis



Issue 6

Showing results in a concise yet understandable form

- Trade-off between summarizing and detailing
- Visual representations often appropriate and efficient

Illustrations of how those six issues have been handled

1. The policy synthesis on primary healthcare commissioned by CHSRF (Nov. 2003)
2. The research collective on primary healthcare in Québec (Feb. 2005) partly funded by CHSRF and FRSQ

Illustrative Case # 1

The policy synthesis

www.chsrf.ca

Choices for Change:
The Path for Restructuring
Primary Healthcare
Services in Canada

CHSRF  FCSS

Canadian Health Services Research **Foundation**
Fondation canadienne de la recherche sur les services de santé

...making research work
...pour que la recherche porte ses fruits

The research context of the synthesis

1. Intervention is complex (organization as a whole, not one single attribute or a simple intervention)
2. Diversity of studies, designs and methods
3. Quantitative studies are predominant

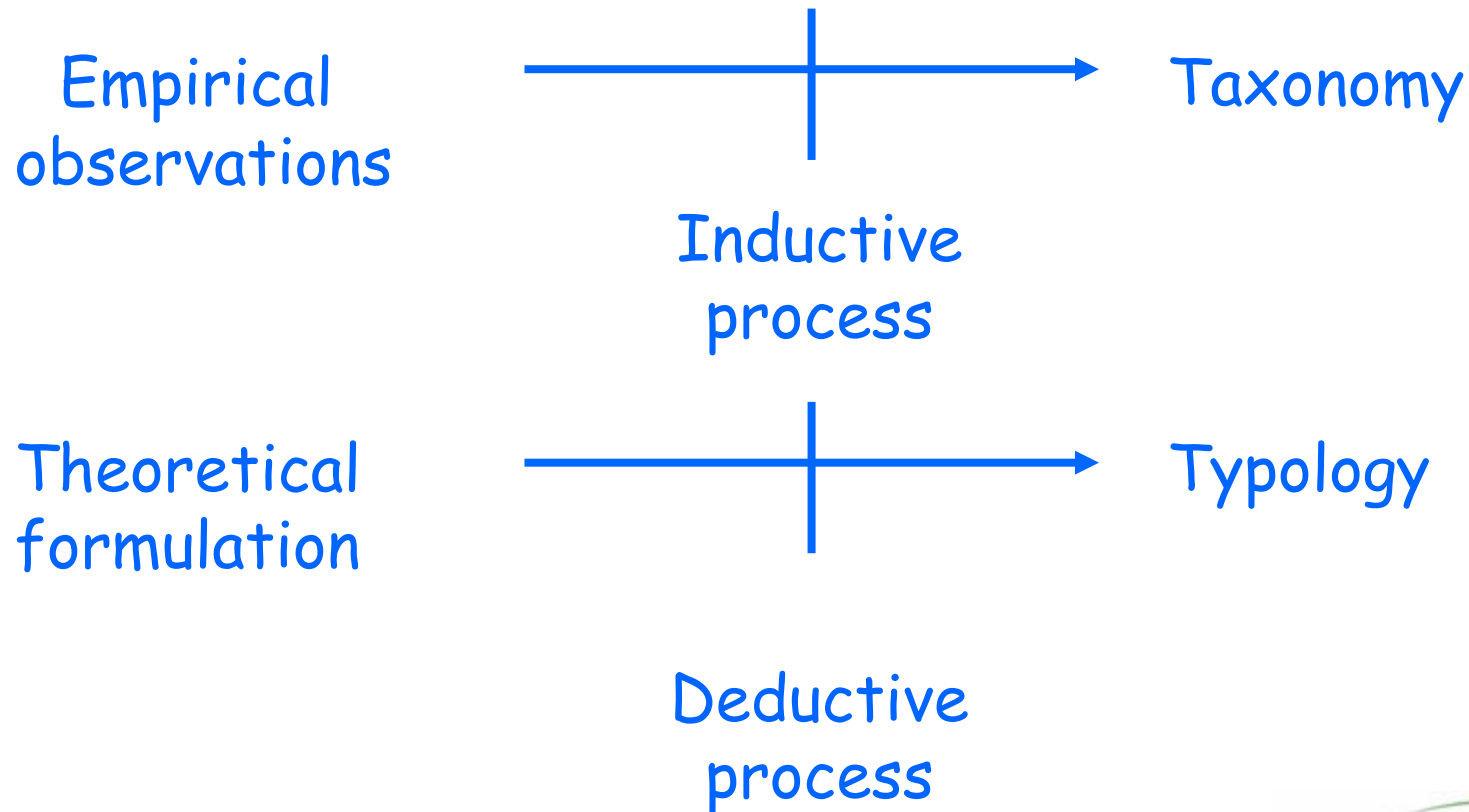
Two major tasks

- Conceptualization and operationalization of PHC organizations
 - ⇒ taxonomy of 4 models
- Linkage of the effects with PHC organization models
 - ❖ quantitative/qualitative data
 - ❖ expert opinions

Conceptualizing and operationalizing models of PHC organizations

The configurational approach

Two approaches to the configurational perspective



We adopted a mixed strategy both
conceptual and empirical

A conceptual approach

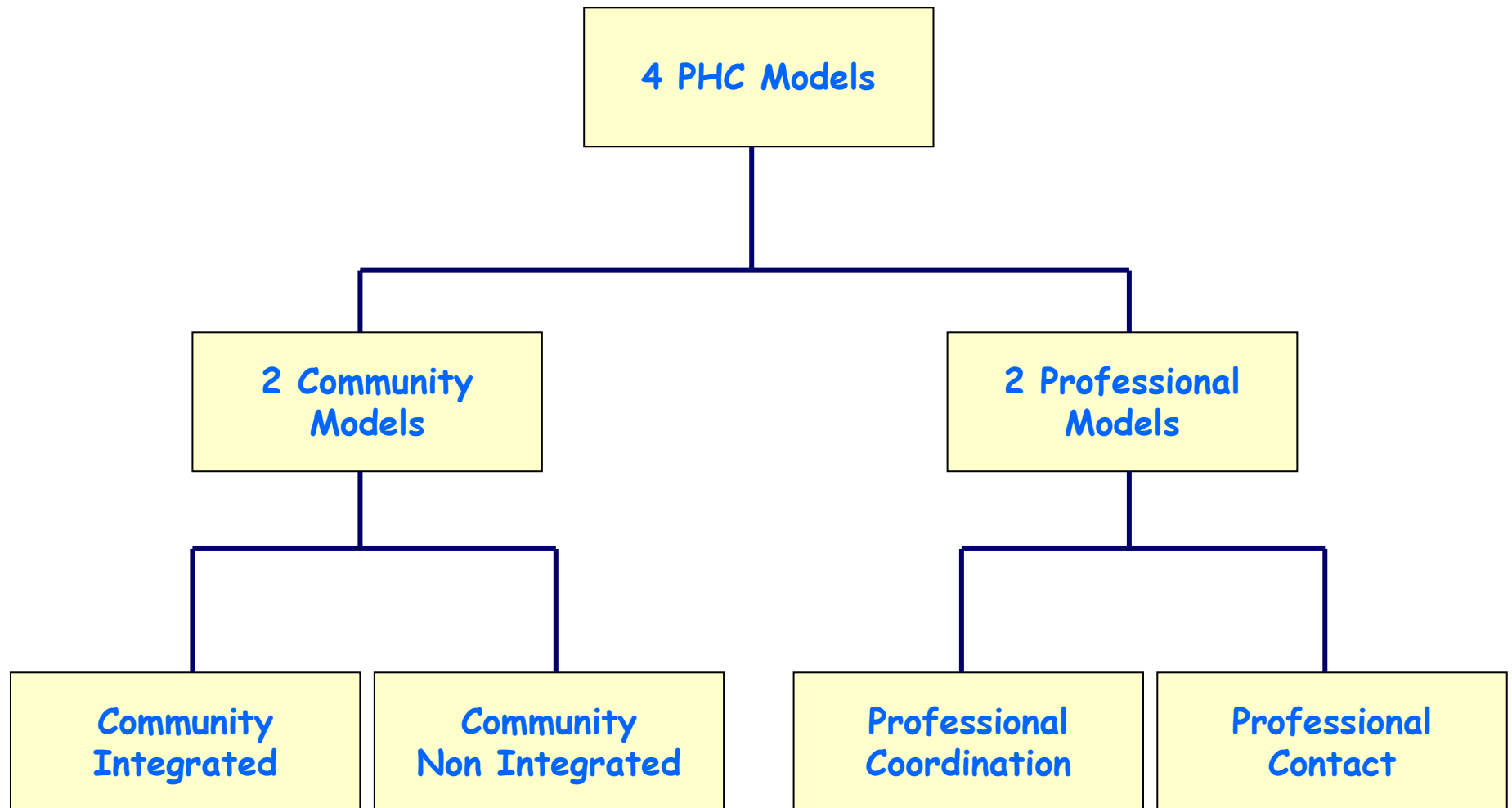
PHC as an organized system for collective action comprises the following elements interacting with each other in a dynamic and coherent way:

- **Vision:** beliefs, values and goals guiding action
- **Resources:** quantity and diversity
- **Structure:** rules, incentives, governance
- **Practice:** processes and mechanisms underlying services production
- **Effects:** process and outcome indicators
- **Environment:** context in which actors operate

An empirical approach

- 28 Cases selected
 - Origin: 1 international (WHO), 16 Canada, 8 Europe, 2 Oceania, 1 USA
 - Status: 9 implemented, 5 experiments, 14 proposals
- Cluster analysis technique used to group cases into homogeneous categories or models

A taxonomy of PHC Models



	Community Models	Professional Models
Vision	Meet health needs of population	Respond to demands of clients
Resources	Multidisciplinary team Direct funding of organization	Team: MDs and nurses Funding through MD's remuneration
Governance	Healthcare centres Governance: Population's representatives	MDs: individual or group Governance by professionals
Practice	Wide range of services (including social)	Mainly medical services: (preventive and curative)

The use of qualitative/quantitative
data/criteria to assess
strength of evidence

Five steps

- Tracking and selecting articles (n = 38)
- Summarizing articles
- Attributing effects to models of the taxonomy
- Assessing strength of evidence
- Producing a global judgment (score) for each model

Assessing strength of evidence

	Internal validity	External validity
Quantitative criteria	Design Sample size (statistical power)	Statistical inference Study population Number of sites
Qualitative criteria	Logic of intervention (Theoretical plausibility) Contextual factors	Theoretical inference Reproducibility of implementation conditions

Producing a global judgment on outcomes for each model

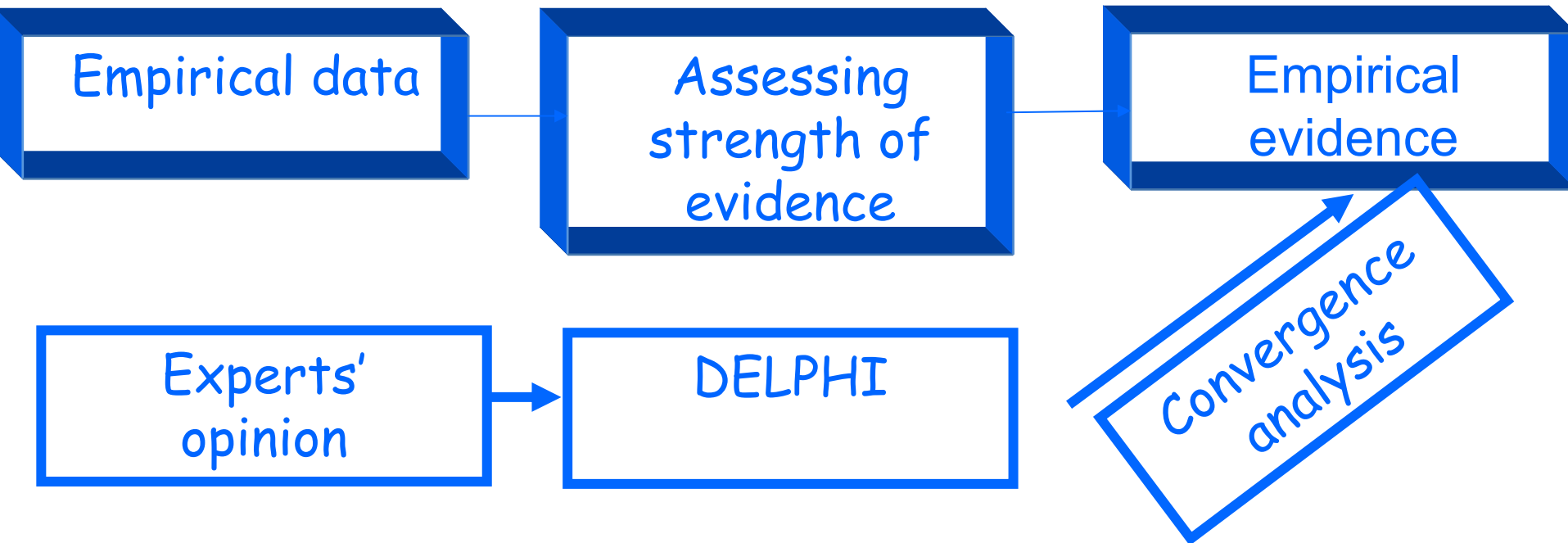
Four criteria:

- ❖ Number of observations
- ❖ Direction of effect (including magnitude of effects)
- ❖ Convergence of observations
- ❖ Strength of evidence (internal and external validity)

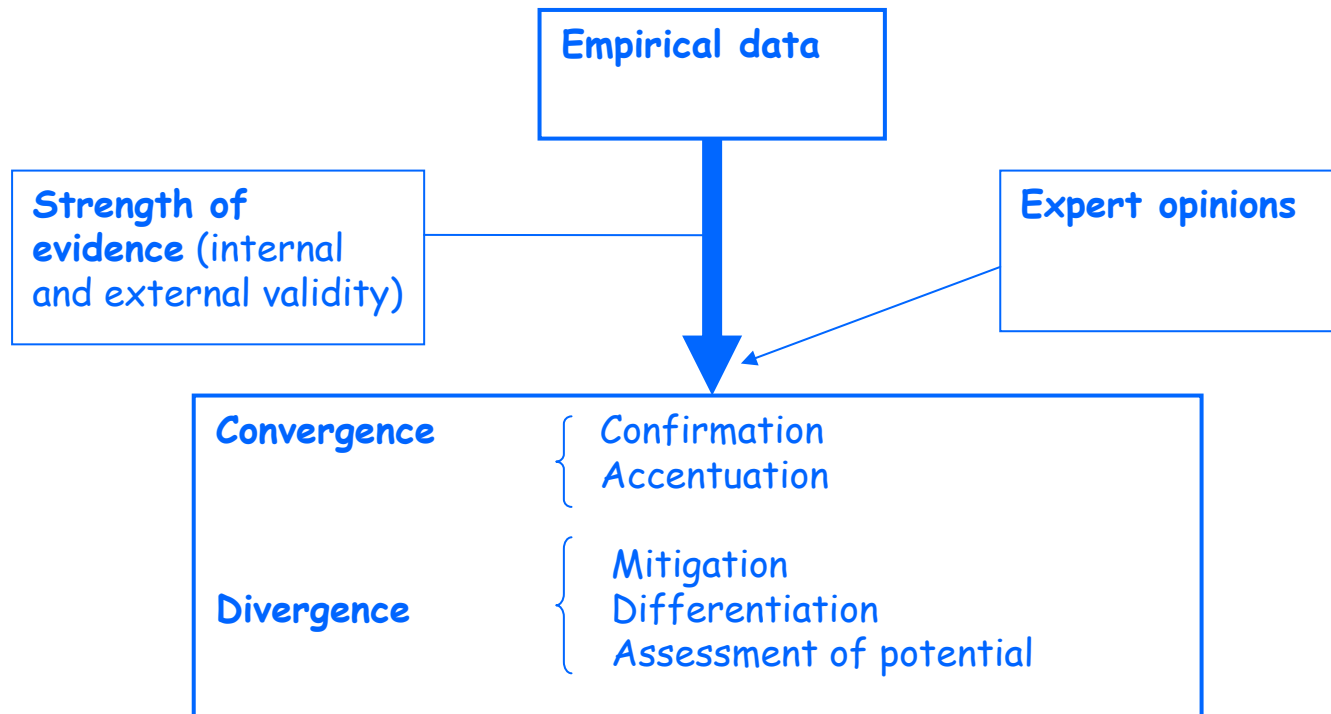
Integrating expert opinions

Use of a DELPHI survey

Combining systematic reviews' and DELPHI's findings to assess evidence



Algorithm for integrating empirical data and expert opinions



Showing the results in a concise
yet understandable form

How to use the results of the synthesis for policy making

1. Choice of model(s)

If objectives to attain are clearly and explicitly stated, what model(s) can best achieve them

2. Prediction of effects

If a model is preferred and chosen, then expected effects are predictable

Evaluation of the synthesis

Factors that influence the likelihood of use by decision makers

	Yes	No
• interaction between investigators and decision makers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• timing and timeliness of the research	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• attributes of the research context	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• format like 1-3-25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• recommendations made by investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• confidence in investigators' competence and integrity	<input type="checkbox"/>	<input type="checkbox"/>

Lavis J et al. Towards systematic reviews that inform healthcare managers and policy makers. Report to CHSRF, November 2004.

Illustrative Case # 2

The research collective

In the collective, we had to deal with the six issues mentioned at the beginning and manage the process of participation of researchers, investigators and decision makers

The team of investigators

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Paul Lamarche, Ph. D.

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Ginette Beaulne, B. Sc., P.N.P.

Dominique Lesage, inf., M. Sc.

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- The Groupe interuniversitaire de recherche sur les urgences
- The Réseau de recherche en santé des populations du Québec
- The Réseau d'appui aux Transformations des Services de Première ligne
- The Direction de santé publique de Montréal
- The Institut national de santé publique du Québec

Approach

Main features

Collective \neq systematic review of the literature

- Direct contribution of researchers
- Participation of decision makers
- Timeliness of the findings: studies under way or recently completed (unpublished)

Approach (cont'd)

Selection of studies

Proposed

+ 90



Selection criteria

Retained

30

Approach (cont'd)

Steps followed by researchers

- Project description sheets
 - standardized
 - as jointly elaborated (April 04)
 - completed by researchers (May 04)
- Presentation of projects ⇒ information sharing session (researchers and decision makers (June 17, 2004))

Approach (cont'd)

Steps followed by researchers

- Revision of project description sheets by researchers (links of their work with others' research)
- First draft of the summary report prepared by investigators and sent for validation to researchers

Analysis

Steps followed by investigators

- Reading the 30 description sheets
- Identifying the recurrent themes and developing an analytical framework
- Cross-sectional reading of the description sheets by identified themes
- Integrating and synthesizing
- Writing the report

Analysis (cont'd)

Material used

- 30 projects description sheets
- Material of the presentations (June 17)
- Notes taken during discussions with decision makers (June 17)

Deliverables

- Summary report
 - According to CHSRF "1.3.25" format

Deliverables (cont'd)

- Cederom containing :
 - key messages and summary
 - the summary report (25 pages)
 - additional information on methods
 - the 30 projects' description sheets
- In French and English ("head to tail" format)

Quantitative/qualitative nature of studies*

	N	%
Quantitative	12	40.0
Qualitative	10	33.3
Quantitative and qualitative	8	26.7
Total	<u>30</u>	<u>100.0</u>

* Determined by P.I.

Assessing strength of evidence in the collective: Basic principles

- Confidence in the authors' / investigators' judgment based on implicit and explicit criteria
- Reproducibility of the synthesis process

Criteria for assessing strength of evidence in the collective

- Number of studies associated with a specific result / convergence and coherence
- Methodological quality of studies (internal validity)
- Generalizability of studies (external validity)

Assessment of internal validity by researcher

	Little	Somewhat	Very much	N.A.*
Internal validity : how confident are you about the strength of the relation between your variables based notably on :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Research design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Sample size (statistical power)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Intervention analysis (logic/theory of intervention)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Implementation analysis (synergy, antagonism with contextual elements)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Assessment of external validity by researcher

	Little	Somewhat	Very much	N.A.*
External validity : how easily can your results be applied in other contexts based notably on :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Size of reference population, diversity of studied cases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Statistical inference (inference from sample to study population)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Implementation analysis (can implementation conditions be found in another context, ability to replicate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Intervention analysis (theoretical inference stemming from the fact that the studied intervention is based on an explicit intervention theory which can be applied in other contexts)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Applicability assessed by researchers

	Little	Somewhat	Very much	N.A.*
Applicability: how easily can your results be used by decision-makers based on what you know to be constraints or barriers or elements facilitating their application:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Describe constraints:				
Describe facilitating elements:				
*N.A.: Not applicable				

Scores on internal validity as assessed by researchers

	Number	%
Low	6	20.0
Medium	13	43.3
High	11	36.7
	<hr/>	<hr/>
	30	100.0

Gréas 1

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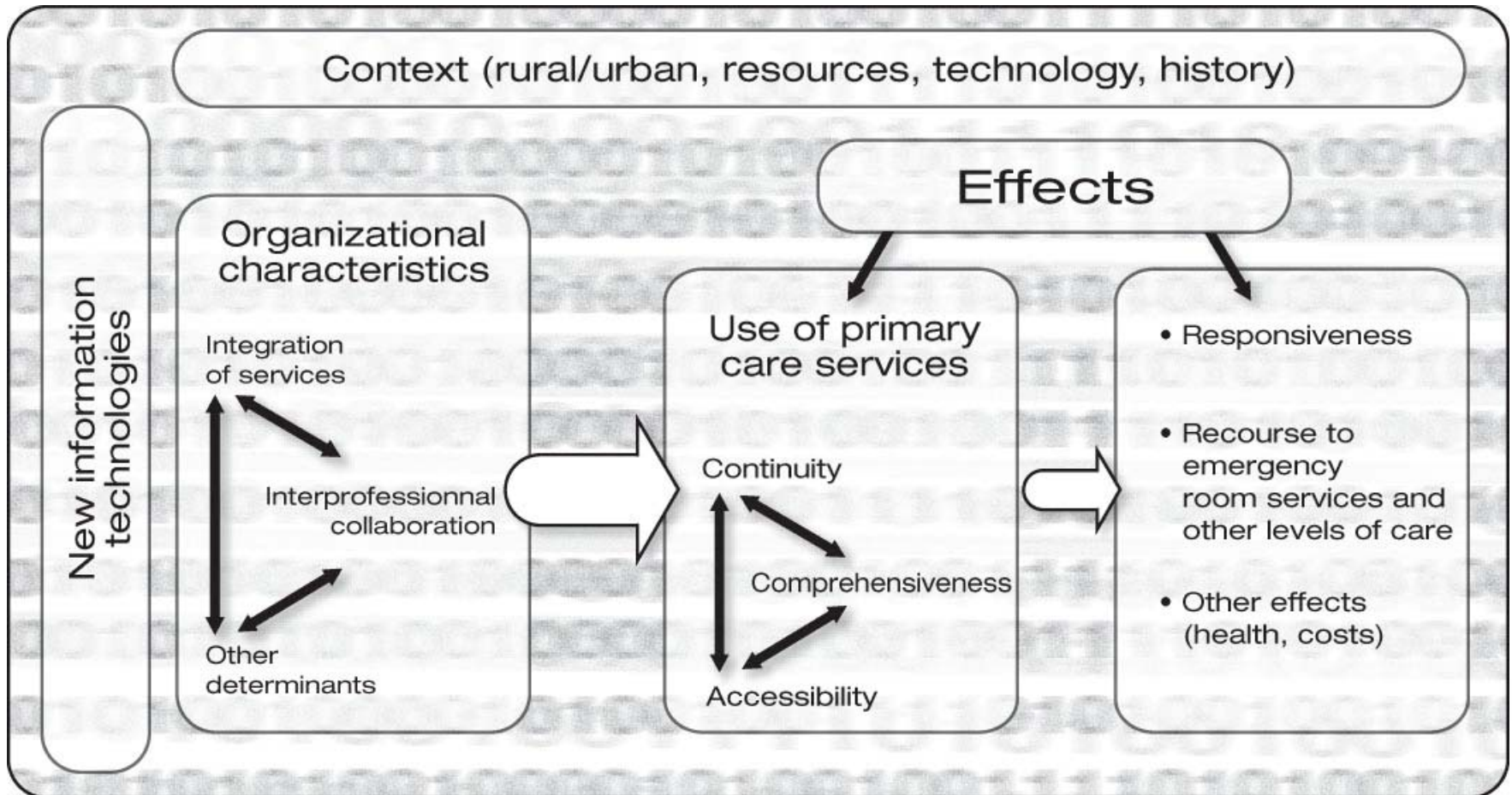
Scores on external validity as assessed by researchers

	Number	%
Low	6	20
Medium	15	50
High	9	30
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	30	100

Applicability of results by decision makers as assessed by researchers

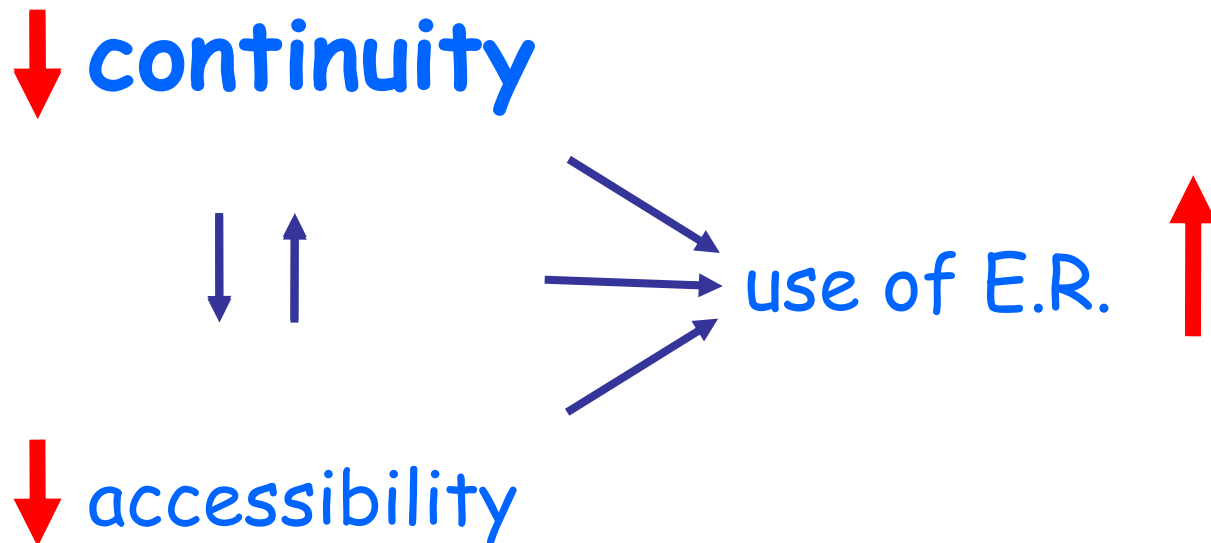
	Number	%
Low	2	6.7
Medium	13	43.3
High	15	50.0
	<hr/> 30	<hr/> 100.0

Analytical framework



Main results

1. Problematic triad



2. How to explain that triad?

- Availability of doctors : a balance between services offered by appointment and without appointment \Rightarrow optimal
- Cultural and linguistic barriers
- Rural/urban paradox : continuity and E.R. utilization higher in rural regions (less severe cases, technological support, role of the GP, access to specialists)

- Promising avenues and their effects

- a. Services integration and interprofessional collaboration

- ↑ accessibility, continuity, comprehensiveness, specially among vulnerable groups
(effects ± revealed but great potential)
- ↓ recourse to institutional confinement

3. Promising avenues (cont'd)

a. Services integration and interprofessional collaboration

- ↓ length of stay in hospitals
- ↓ E.R. length of stay and readmission
- No effect on total costs ⇒ substitution from institutional to community care

3. Promising avenues (cont'd)

a. Services integration and interprofessional collaboration

- \pm effect on health
- \uparrow quality of life
- \uparrow responsiveness of services towards patients and their families and towards professionals (\uparrow satisfaction)

3. Promising avenues (cont'd)

- b. New information and communication technologies in synergy with services integration and interprofessional collaboration
 - ↑ accessibility, continuity, comprehensiveness (potential +)
 - ↑ responsiveness towards professionals

4. Promising avenues for solutions: Implementation

a. "Barriers"

- rivalries between organizations
- limited resources
- budgeting and remuneration modes
- lack of financial and professional incentives
- deficient information systems
- lack of time \Rightarrow time schedules too short

4. Promising avenues for solutions: Implementation (cont'd)

b. Favourable conditions

- experience of success in local projects
- active participation of the population
- support and implication of local organizations

4. Promising avenues for solutions: Implementation (cont'd)

b. Favourable conditions

- Flexibility and adaptation to different contexts (not a single model)
- Focus on professional/clinical practices vs structures
- rural environment more favourable
- time and patience needed

4. Promising avenues for solutions: Implementation (cont'd)

b. Favourable conditions

- professional financial incentives
- shared vision of change
- relation of trust between professionals and managers

Key messages to decision makers

- Focus on continuity rather than only on accessibility
- Integrated services networks \Rightarrow quality of services improvement rather than cost reduction, at least in the short term

Key messages to decision makers (cont'd)

- Strategies for implementing changes should center on professional practices rather than structures
- Create a climate of trust and respect between concerned actors

Key messages to decision makers (cont'd)

- Essential conditions such as changes in payment and remuneration modes
- Changes may take different forms according to context: a general framework is necessary to ensure coherence while leaving sufficient room for autonomy and initiative

A major challenge

Participation of doctors

Evaluation of the collective

Factors that increase the prospects for research use by managers and decision makers

	Yes	No
• interaction between investigators and decision makers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• timing and timeliness of the research	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Conclusion:

Three concerns raised by our experiences

1. Epistemological
2. Methodological
3. Knowledge exchange

Epistemological

- What is evidence?
- What degree of evidence do decision makers need?

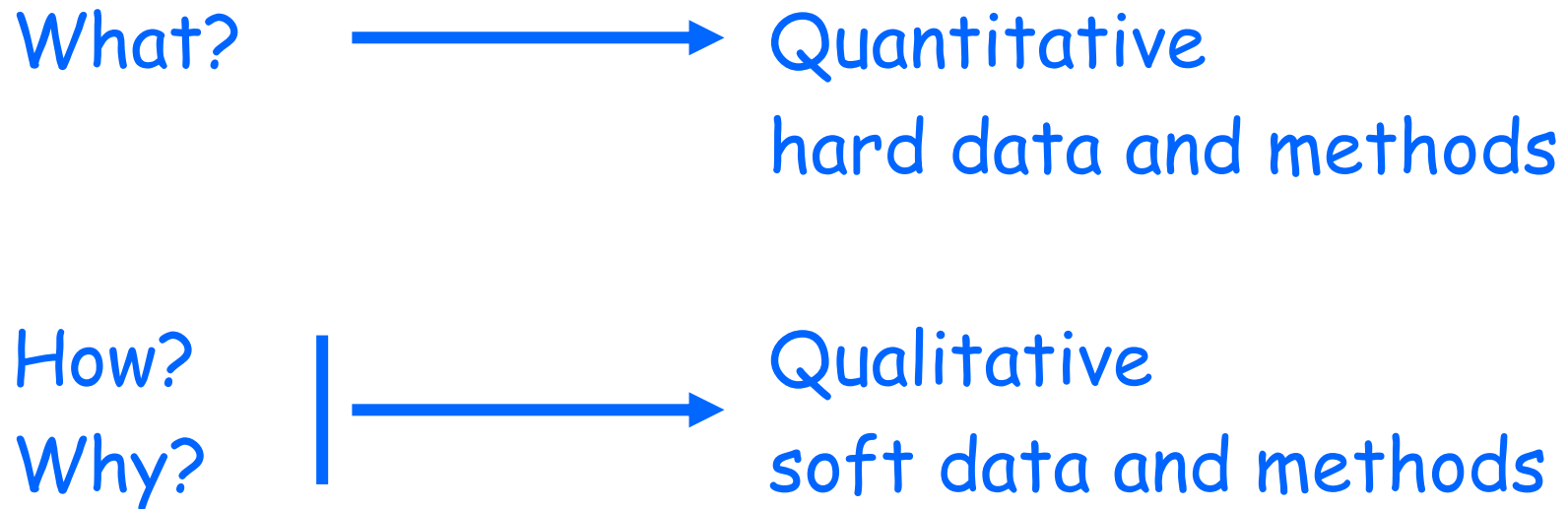
Epistemological (cont'd)

- More relative notion of evidence based on increased certainty rather than « absolute certainty »
- “Satisficing” rather than “optimizing” criterion for decision making (Simon)

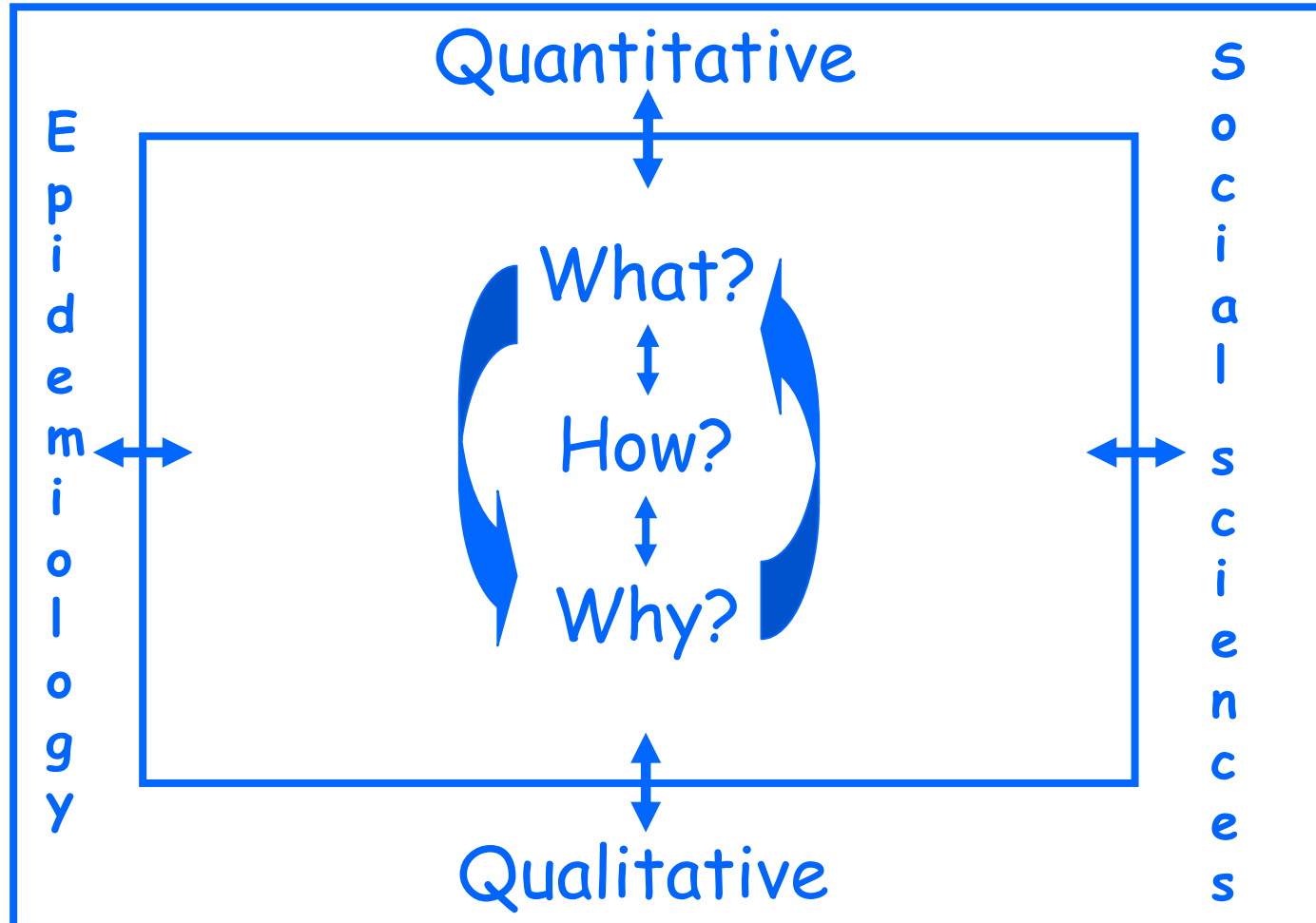
Methodological

Systematic reviews should be broadened to incorporate not only qualitative criteria and information but also the views expressed by different social actors

We must move from the traditional simplistic and erroneous view...



...to a dynamic approach more adapted to complexity



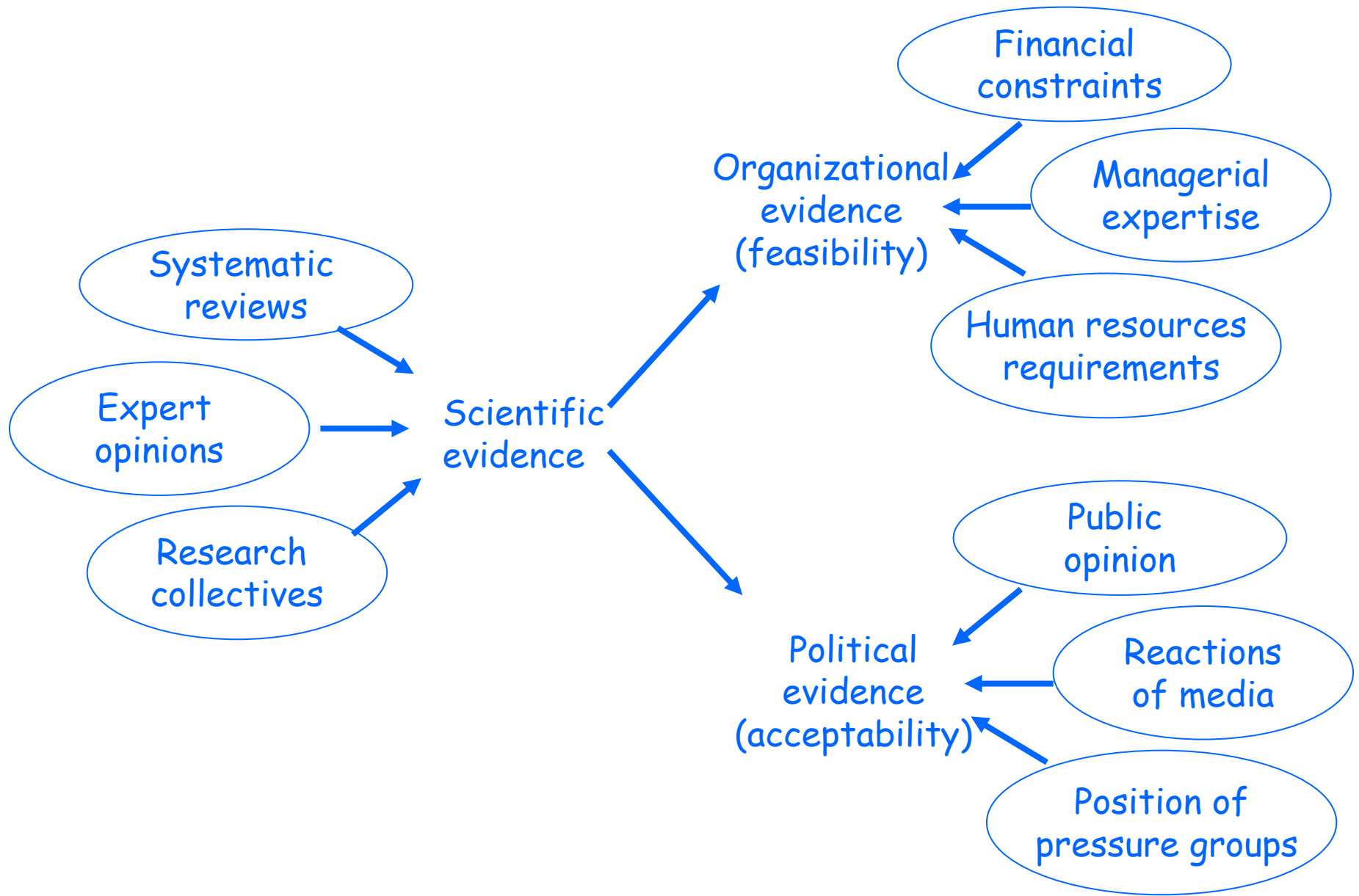
Such as “realist synthesis”

“Realist synthesis is an approach to reviewing research evidence on complex social interventions, which provides an exploratory analysis of how and why they work (or don't work) in particular contexts or settings. It complements more established approaches to systematic review, which have been developed and used mainly for simpler interventions like clinical treatments or therapies”

Pawson R et al. Realist synthesis: An introduction RMP Methods Paper 2/2004, University of Manchester.

Knowledge exchange

Scientific evidence: A necessary but not sufficient condition for organizational and political evidence?



Adapted from Klein referred to in What Counts? Report of the 6th CHSRF Annual Invitational Workshop, March 2004.

Is research evidence convincing?

“For policy makers, even the most solid research evidence can be rejected as “dense” or “academic” when it challenges strongly held beliefs or goals. Less applicable or “soft” research results are often embraced by decision makers when they support the value system in place”.

CHSRF What Counts? Report of the 6th Annual Invitation Workshop, March 2004.

Evidence based decision making?

or

Confidence based decision making?