



*Qualità scientifica o rilevanza  
pratica della ricerca? I vantaggi, gli  
svantaggi e i dilemmi  
dell'integrazione tra discipline*

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 SUMITOMO CHEMICAL Co., Ltd.

## **Partnerships for Malaria Control in Africa**

**Robin Slatter  
Business Development  
Manager**

**June 1<sup>st</sup>, 2007   GHC**







- ‘...people will gossip! ... People will say that this person is so proud, she can’t sleep without a net here...’
- (Hasina, female farmer, Ulanga village).
- ‘...you know even to sleep on a mattress is not normal. People will say “why is this person sleeping on a mattress while we are in mourning?” ’
- (Jabarl, male farmer, Ulanga village)





# Variabili da prendere in considerazione

- La tecnologia
- Il sistema sociale in cui la tecnologia si inserisce
  - Le barriere all'uso della tecnologia
  - Il grado di accettazione sociale della tecnologia



## Secondo caso: i modelli di comportamento del consumatore





# Economics

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## DANIEL L. MC FADDEN

Professor of the Graduate School  
Presidential Professor of Health Economics at USC  
2000 Nobel Laureate in Economics

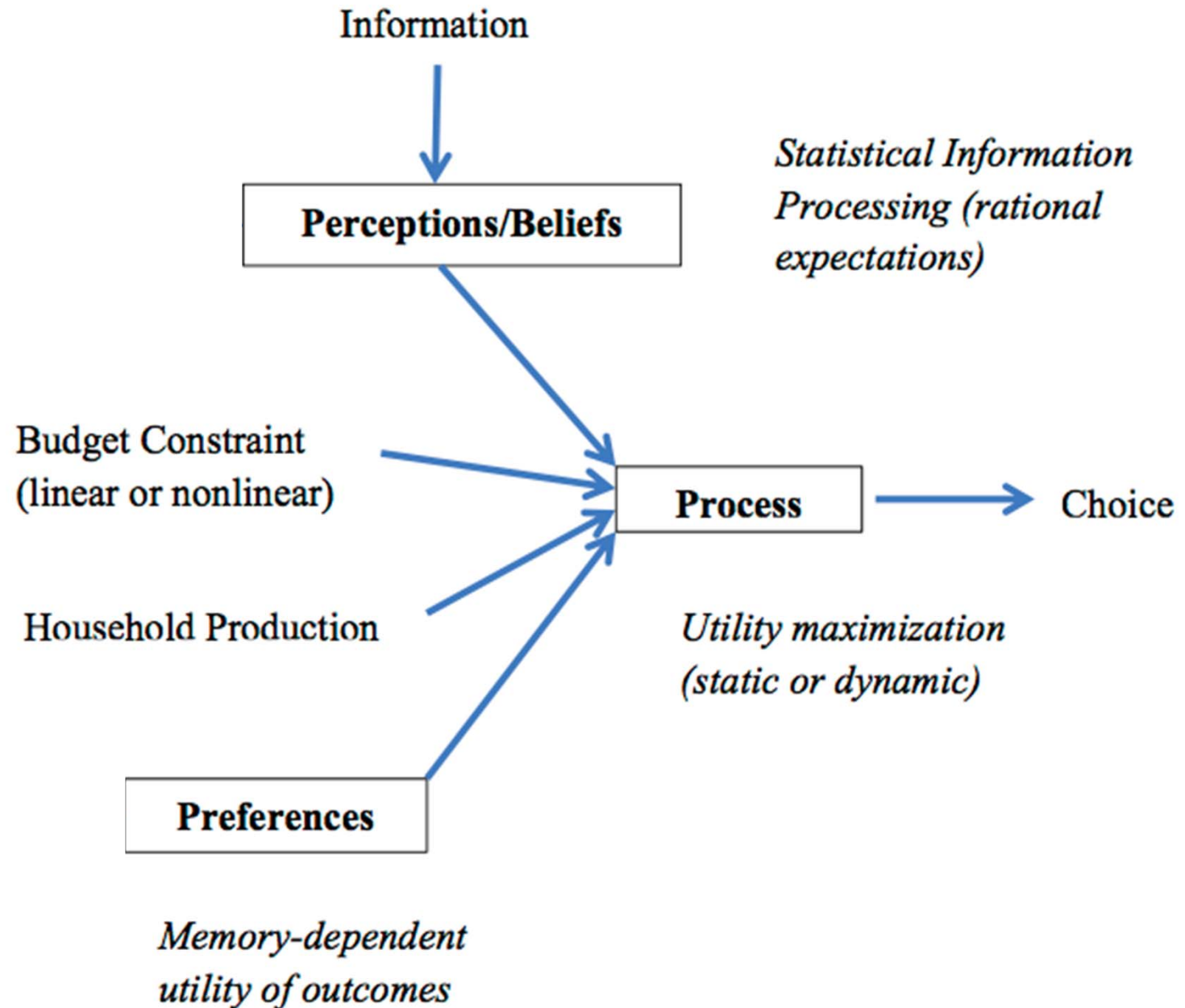
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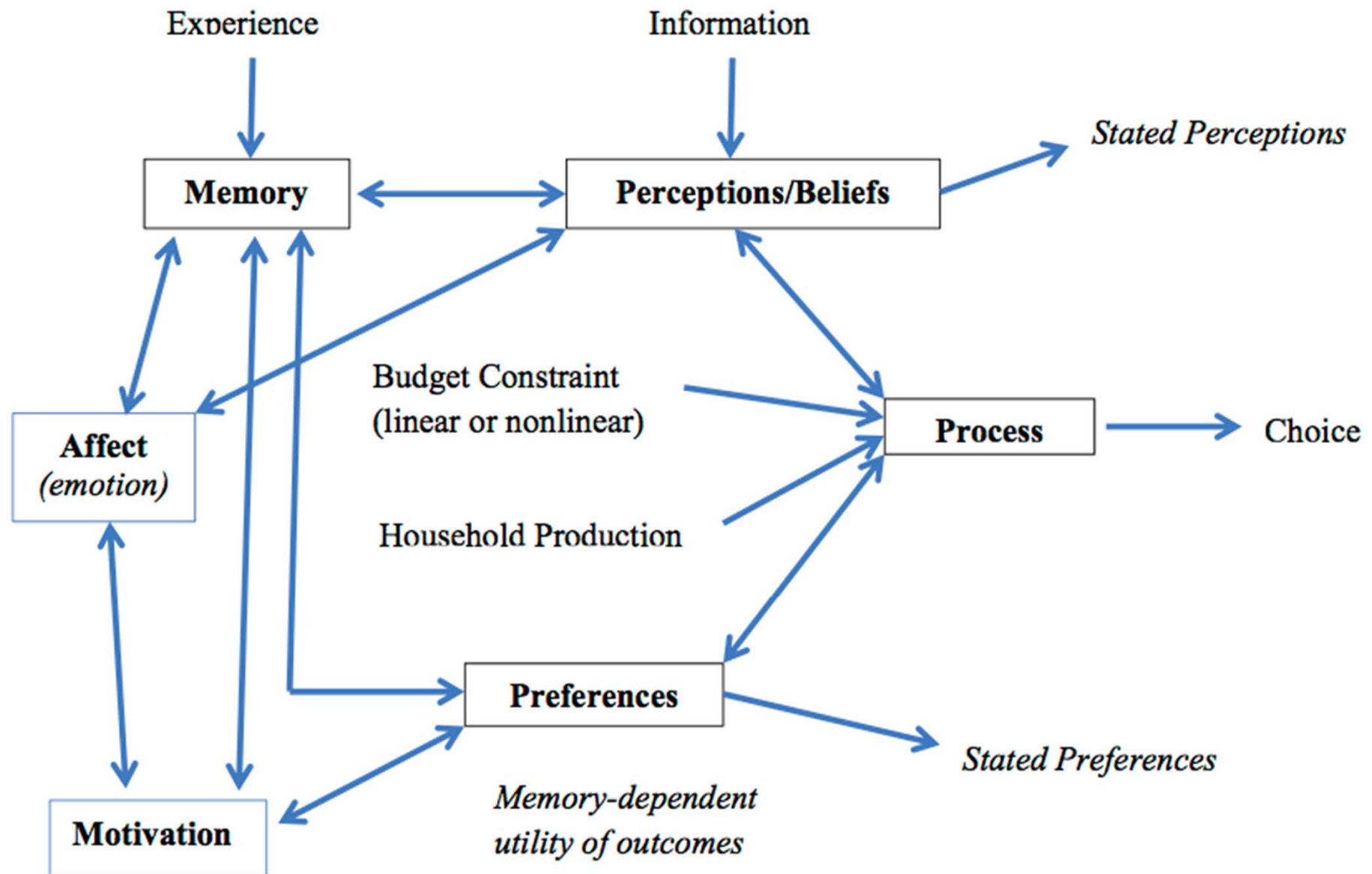
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# Boundaries

Irving Fisher (1892)

- To fix the idea of utility, the economist should go no further than is serviceable in explaining *economic* facts. It is not his province to build a theory of psychology.



given the new challenges we confront today,  
there is increasing recognition within formal S&T  
organizations that the current AKST model  
requires revision. **Business as usual is no longer  
an option**



despite significant scientific and technological achievements in our ability to increase agricultural productivity, **we have been less attentive to some of the unintended social and environmental consequences of our achievements**





# La scienza post-normale

- Interessi e valori differenti in gioco
- Incertezza



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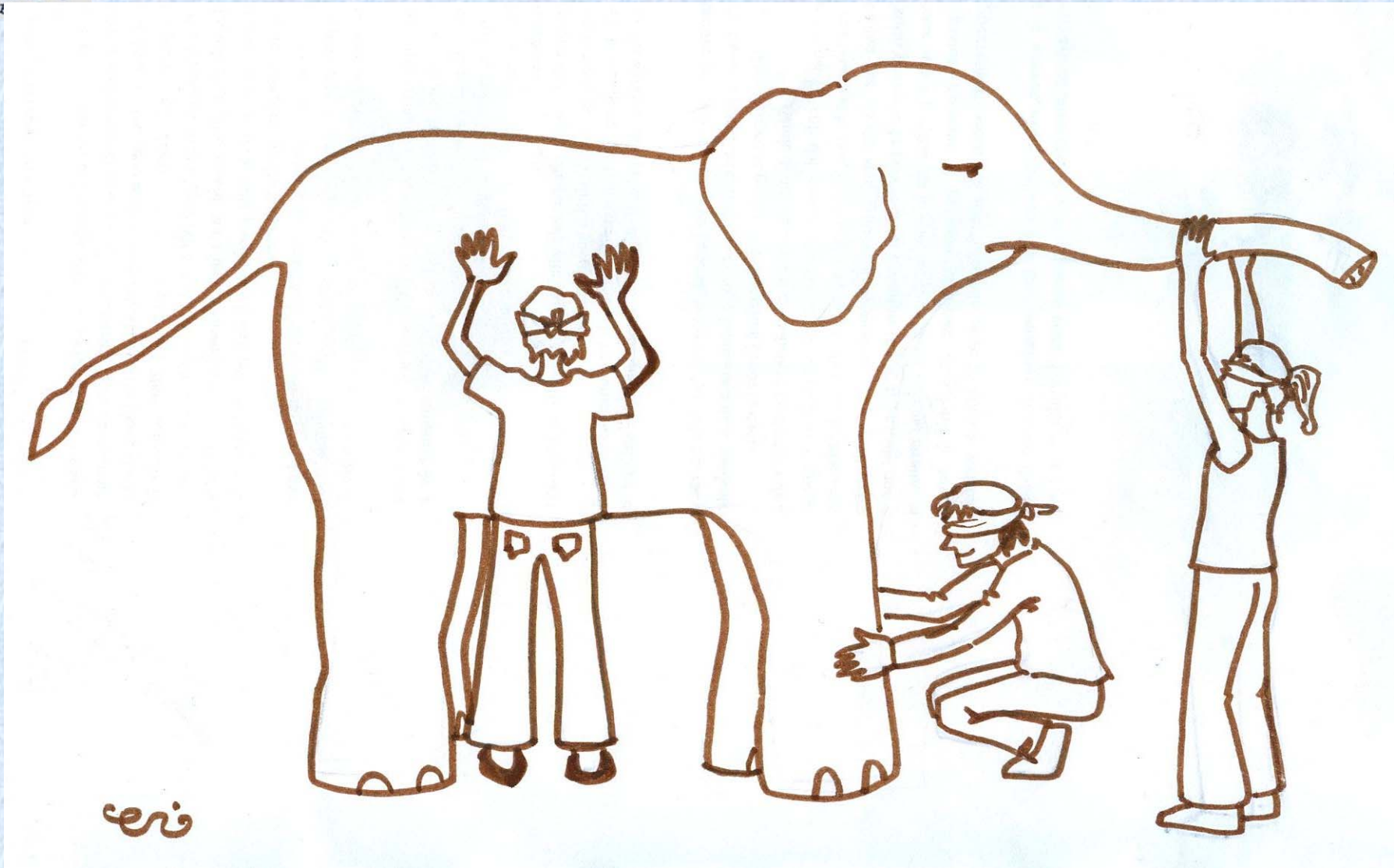
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## Caught in a Tangle: **Mosquito Nets versus Malaria**

**Africa's best hope to fight malaria is the wide distribution of mosquito-repelling bed nets. But who best serves that need: the public sector or private interests?**





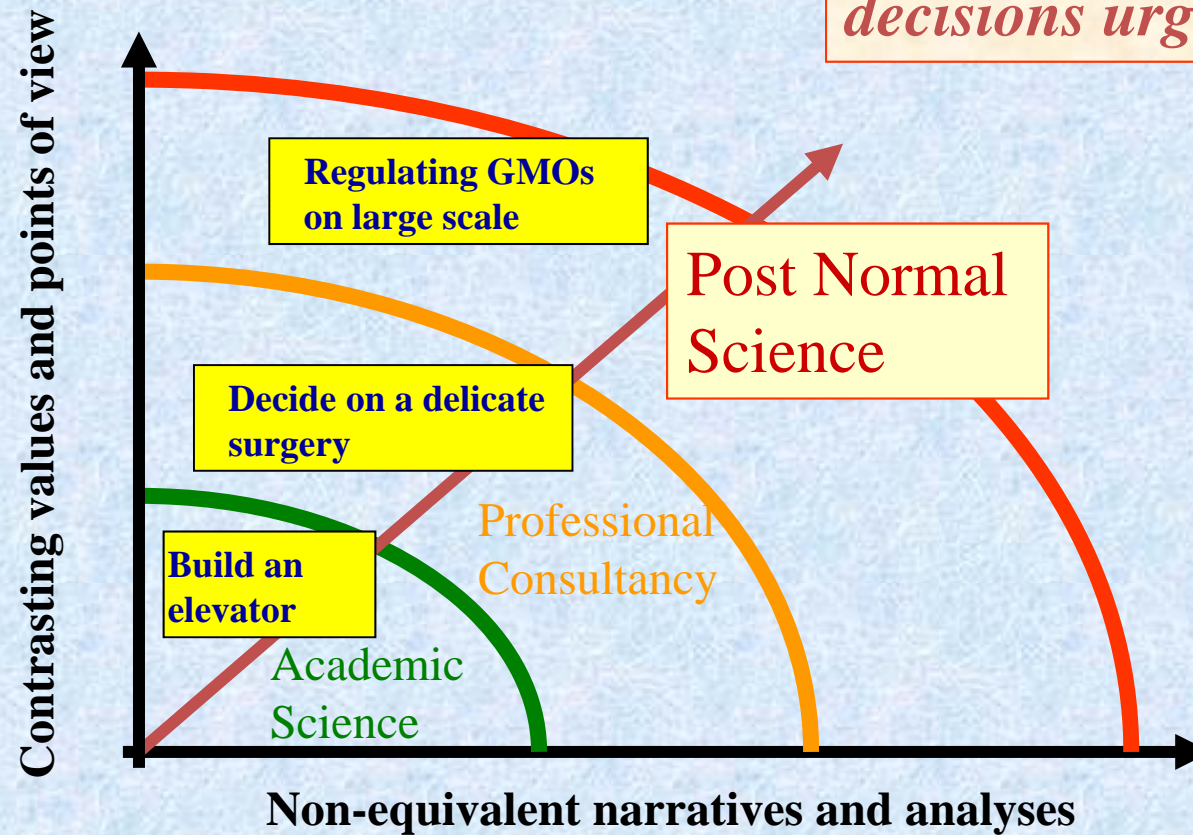


# Perché incertezza?

- Le discipline definiscono i confini di un sistema
- L'applicazione alla realtà implica l'adattamento ad un contesto in cui sono presenti variabili non considerate



## DECISION STAKES



*facts uncertain,  
values in dispute,  
stakes high,  
decisions urgent*

S. Funtowicz, J. Ravetz



# Di cosa ha bisogno la scienza post-normale?

- Accettazione dei limiti della scienza
- Apertura ad altre discipline
- Apertura ad altre forme di conoscenza
- Apertura a differenze di valore

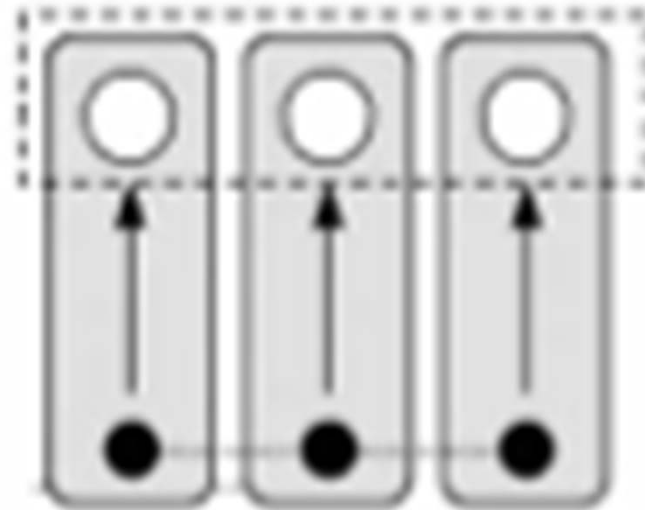




specialismo

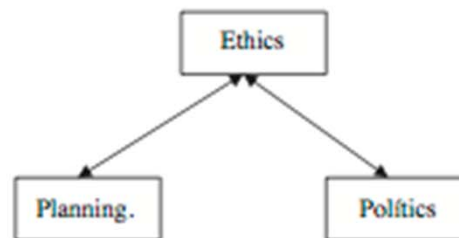


multidisciplinarietà

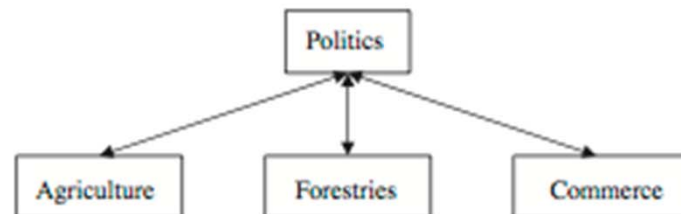




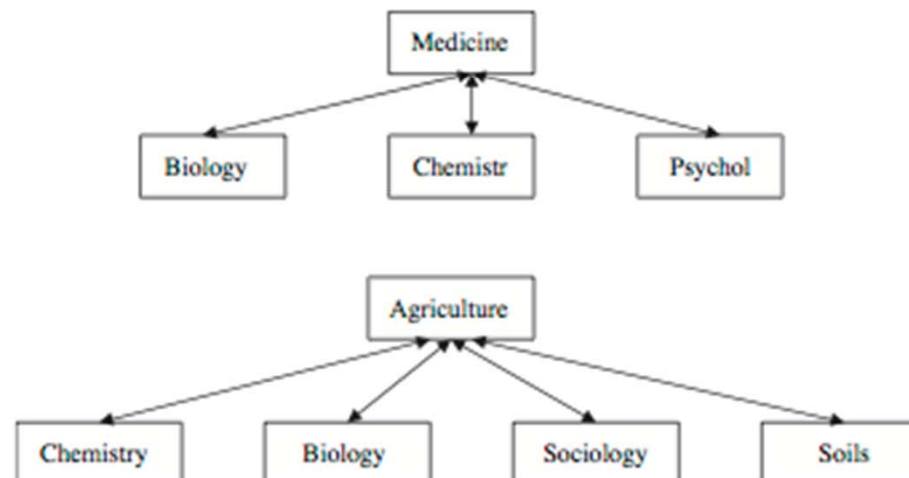
**Values Interdiscipline.**



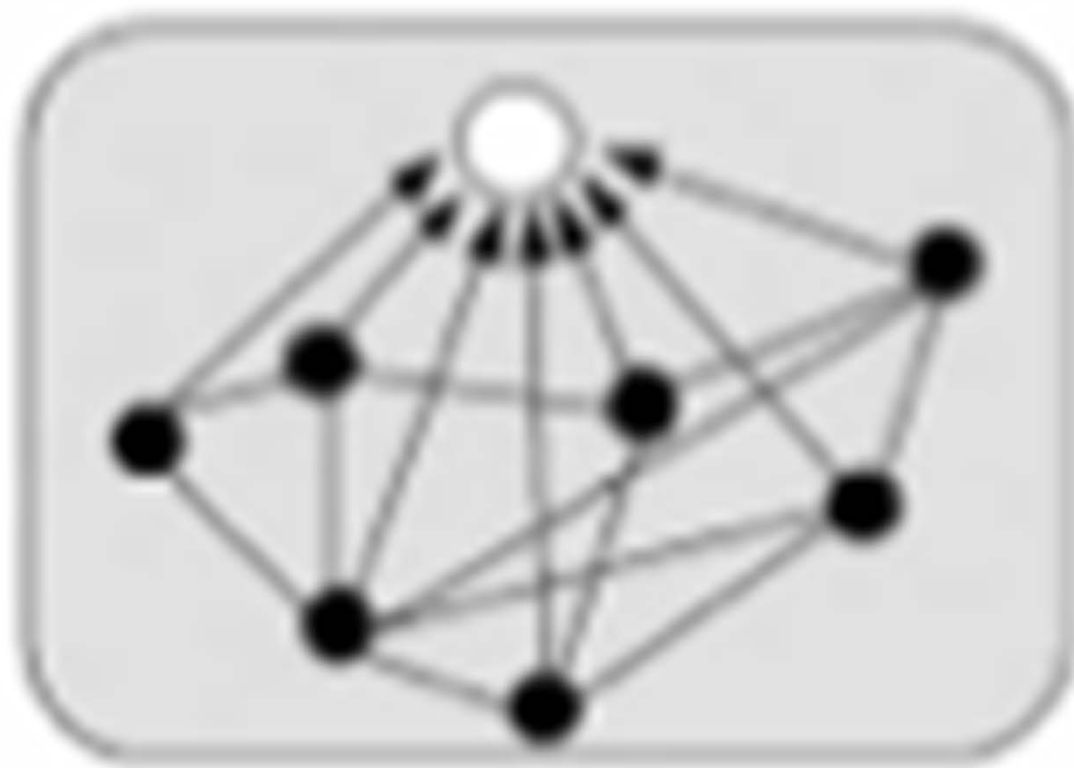
**Normative Interdiscipline.**



**Purposive (Pragmatic) Interdiscipline.**

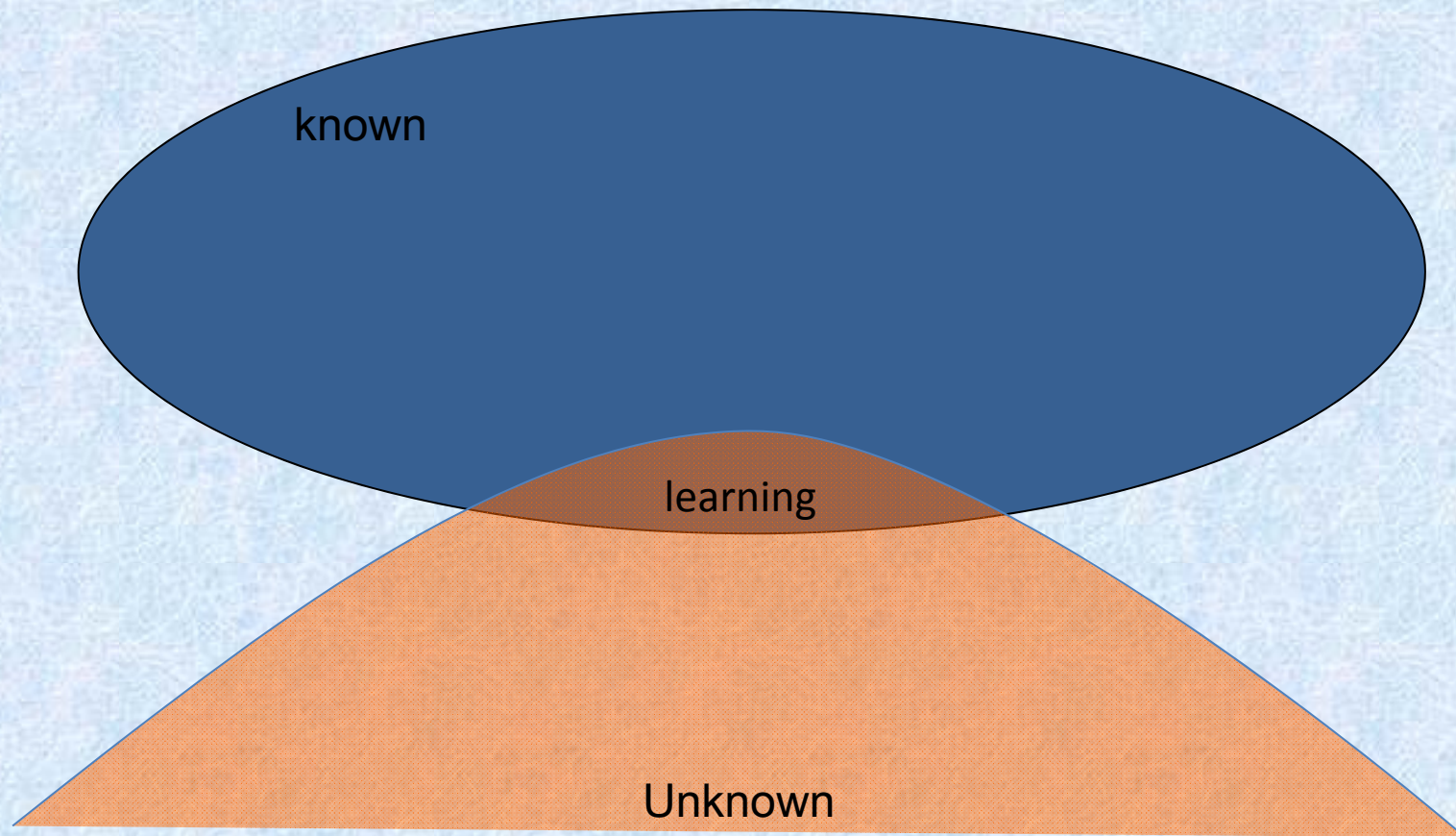


interdisciplinarità



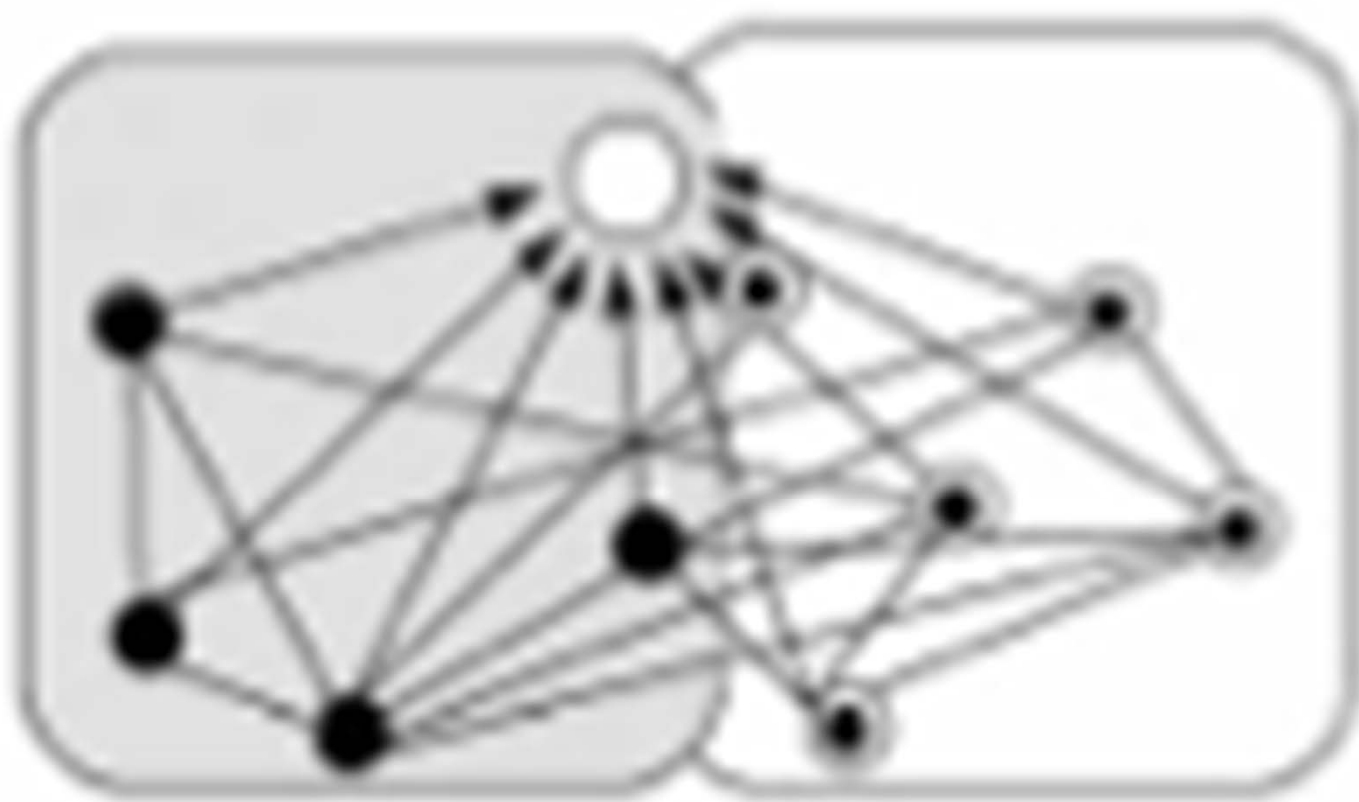


# Innovation and diversity: boundaries





transdisciplinarità





Transdisciplinarity is a critical and self-reflexive research approach that relates societal with scientific problems; it produces new knowledge by integrating different scientific and extra-scientific insights; its aim is to contribute to both societal and scientific progress; integration is the cognitive operation of establishing a novel, hitherto non-existent connection between the distinct epistemic, social–organizational, and communicative entities that make up the given problem context.

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## Correspondence

*Nature* **463**, 876 (18 February 2010) | doi:10.1038/463876a; Published online 17 February 2010

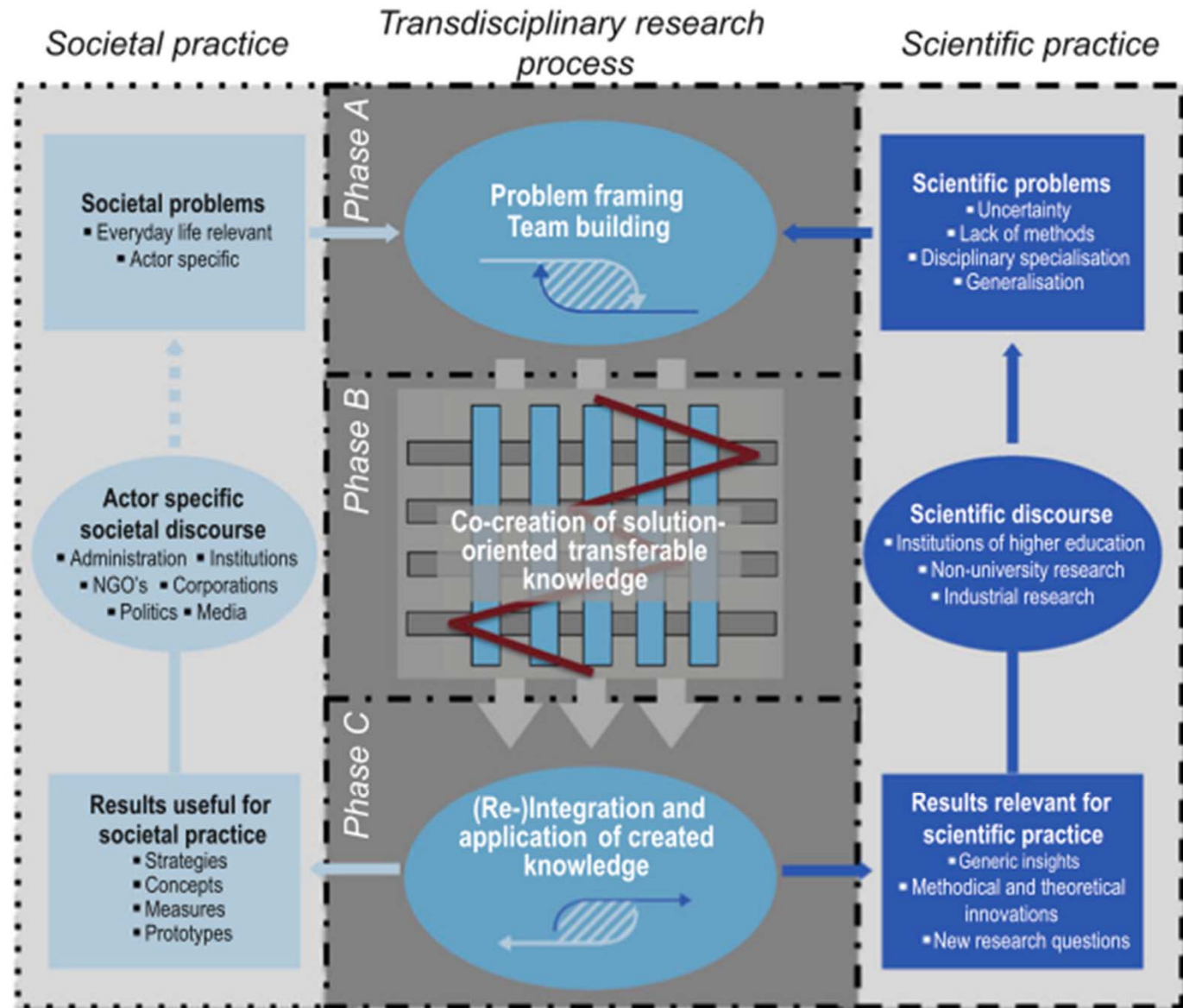
### Transdisciplinary EU science institute needs funds urgently

See associated Correspondence: [Leegood et al.](#), *Nature* **464**, 831 (April 2010)

Jan W. Vasbinder<sup>1</sup>, Bertil Andersson<sup>2</sup>, W. Brian Arthur<sup>3</sup>, Maarten Boasson<sup>4</sup>, Rob de Boer<sup>5</sup>, Jean Pierre Changeux<sup>6</sup>, Esteban Domingo<sup>7</sup>, Manfred Eigen<sup>8</sup>, Alan Fersht<sup>9</sup>, Daan Frenkel<sup>9</sup>, Martin Rees<sup>9</sup>, Theo Groen<sup>10</sup>, Robert Huber<sup>11</sup>, Tim Hunt<sup>12</sup>, John Holland<sup>13</sup>, Robert May<sup>14</sup>, Erling Norrby<sup>15</sup>, Peter Nijkamp<sup>16</sup>, Jean Marie Lehn<sup>17</sup>, Rudy Rabbinge<sup>18</sup>, Marten Scheffer<sup>18</sup>, Peter Schuster<sup>19</sup>, Ismail Serageldin<sup>20</sup>, Jan Stuip<sup>21</sup>, Jan de Vries<sup>22</sup>, Wim van Vierssen<sup>23</sup> & Rein Willems<sup>24</sup>



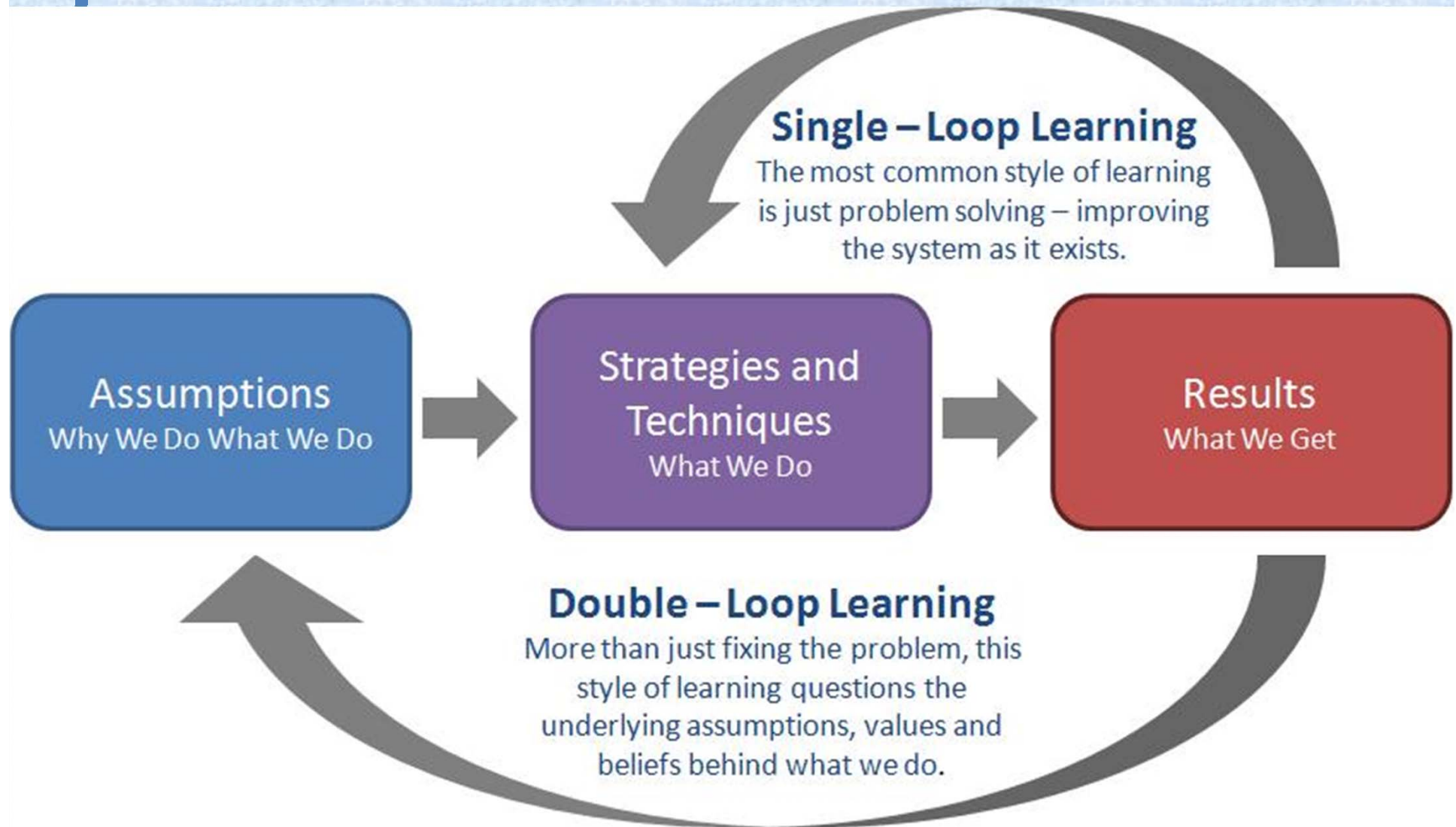
**Fig. 1** Conceptual model of an ideal-typical transdisciplinary research process (adapted from: Bergmann et al. 2005; Jahn 2008; Keil 2009; Bunders et al. 2010; there are several models which outline transdisciplinary research process in a similar way: e.g., Scholz et al. 2006; Pohl and Hirsch Hadorn 2007; Wiek 2009; Carew and Wickson 2010; Krütli et al. 2010b; Stokols et al. 2010; Talwar et al. 2011)







# Cosa succede alle discipline quando si aprono?





# I limiti della transdisciplinarietà

- Processi lunghi → minore produttività
- Metodi ancora non consolidati
- Rischio di superficialità
- Perdita di rigore



Trasformare la transdisciplinarietà in disciplina?



# Conclusioni

- Abbiamo bisogno delle discipline
- Abbiamo bisogno di risolvere problemi



Un adeguato sistema di incentivi



Grazie per l'attenzione!





# References

- Argyris, Chris. 1976. "Single-loop and Double-loop Models in Research on Decision Making." *Administrative Science Quarterly*: 363–375.
- Brandt, Patric, Anna Ernst, Fabienne Gralla, Christopher Luederitz, Daniel J. Lang, Jens Newig, Florian Reinert, David J. Abson, and Henrik von Wehrden. 2013. "A Review of Transdisciplinary Research in Sustainability Science." *Ecological Economics* 92 (August): 1–15. doi:10.1016/j.ecolecon.2013.04.008.
- Dunn, Christine E., Ann Le Mare, and Christina Makungu. 2011. "Malaria Risk Behaviours, Socio-cultural Practices and Rural Livelihoods in Southern Tanzania: Implications for Bednet Usage." *Social Science & Medicine* 72 (3) (February): 408–417. doi:10.1016/j.socscimed.2010.11.009.
- Functowitz, Silvio / Ravetz, Jerome (1993): *The Emergence of Post-Normal Science* In: Schomberg, René von (Hrsg.): *Science, Politics and Morality*. Dordrecht: Kluwer Academic Publishers: 85-126
- Gibbons, Michael. 1999. "Science's New Social Contract with Society." *Nature* 402: C81–C84.
- Jahn, Thomas, Matthias Bergmann, and Florian Keil. 2012. "Transdisciplinarity: Between Mainstreaming and Marginalization." *Ecological Economics* 79 (July): 1–10. doi:10.1016/j.ecolecon.2012.04.017.
- Lang, Daniel J., Arnim Wiek, Matthias Bergmann, Michael Stauffacher, Pim Martens, Peter Moll, Mark Swilling, and Christopher J. Thomas. 2012a. "Transdisciplinary Research in Sustainability Science: Practice, Principles, and Challenges." *Sustainability Science* 7 (S1) (February 4): 25–43. doi:10.1007/s11625-011-0149-x.
- Max-Neef, Manfred A. 2005. "Foundations of Transdisciplinarity." *Ecological Economics* 53 (1) (April): 5–16. doi:10.1016/j.ecolecon.2005.01.014.
- Ramadier, Thierry. 2004. "Transdisciplinarity and Its Challenges: The Case of Urban Studies." *Futures* 36 (4) (May): 423–439. doi:10.1016/j.futures.2003.10.009.
- Tress, Bärbel, Gunther Tress, and Gary Fry. 2006. "Defining Concepts and the Process of Knowledge Production in Integrative Research." *From Landscape Research to Landscape Planning*: 13–26.