Navigating the waters around “wicked problems”: Perspectives on misconduct from COPE
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Journal editor for 20+ years
Member of COPE since 2009
Elected to COPE Council 2012
Elected secretary of COPE Trustee Board 2015
Investigated 2 cases of misconduct that resulted in retractions
Requested a misconduct investigation against an author via University and ORI
Independent contractor to AANP to edit our journal published by Wiley
No other competing interests to declare
About COPE

Began in London in 1997 as small, informal group of journal editors to discuss issues related to publication ethics

Registered Charity and Corporation under UK law

Today we have more than 10,000 members from 103 countries from Algeria to Zimbabwe

Membership is international in scope and fully inclusive in subject matter
COPE Council
strategy day retreat
June 16, 2016

18 Council members
3 staff
COPE Aims

Provide practical resources to educate and support our members
Provide leadership in thinking on publication ethics
Provide a neutral, professional voice
“Research is iterative and necessitates a clean “pool” of knowledge. “
What did we learn yesterday?
How does COPE think about these problems?
What does a wicked problem look like?

Known as Wicked Problem (Horst Rittle)

Ill structured Problem (Ian Mitroff)

Social Mess (Robert Horn)

To see this map in full detail go to <www.macrovu.com/GMUnknownterritory.html>
Horst Rittle’s original 10 characteristics

1. There is no definite formulation of a wicked problem.
2. Wicked problems have no stopping rules.
3. Solutions to wicked problems are not true-or-false, but better or worse.
4. There is no immediate and no ultimate test of a solution to a wicked problem.
5. Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.

6. Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.
7. Every wicked problem is essentially unique.
8. Every wicked problem can be considered to be a symptom of another [wicked] problem.
9. The causes of a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution.
10. [With wicked problems,] the planner has no right to be wrong.

What is a “wicked problem”?

Complex
Difficult to define
No easy solution
Candidate solutions create even more problems
Multiple stakeholders involved
Multiple competing interests
No clear indication a solution has been reached after much discussion
How complex is the problem?

• New models of publishing and accessing information
• Increasing number of journals in which to publish
• Increasing strain on peer reviewers to review the science
• Increasingly complex analytic techniques being used
• Incentivized to publish more articles without regard to quality
• Academics incentivized to publish in high impact journals
• Institutional reputation tied to publishing volume and metrics
• Institutional silos
How is the problem defined?

- Non-reproducibility of science
- Push to do “safe” research
- Push to publish quickly before everything is properly vetted
- Unintentional errors not caught in peer review
- Intentional errors difficult to catch
- Scientific integrity is at stake
  - Average person does not trust science
  - Researchers do not trust journal articles and want to see data
- Journal editors do not have resources to conduct investigations
What solutions have been tried and failed?

• Naming and shaming
• Criminal prosecution
• Sanctions on future grant applications
• Complaints to COPE to adjudicate the science rather than the process
• Institutional investigations in some cases
• Websites for commentary like PubMedCommons and PubPeer
• Bloggers noted for critical commentary
• Whistleblowers
What new problems have been created?

• Requiring submission of data with a manuscript
  • Journals have to change processes
  • Data have to be secured and managed
• Reputational risk for innocent parties
• Junior scientists taking the “fall” for problems
• Sophisticated technologies to fake all kinds of things
  • Peer review
  • Figures, data
  • Work-arounds to thwart plagiarism detection software
• Programs that generate gibberish papers
• Companies supplying new articles complete with data for money
Who are the multiple stakeholders?

- Funders
- Publishers
- Journal editors
- Academic institutions
- Research Integrity Offices
- Legal system
  - Lawyers specialize in representing whistleblowers or those being investigated
- Political systems
- The public who use and rely on science
What are the multiple competing interests?

- Authors being paid to publish in high-impact journals
- Publication in reputable journals is the “coin of the realm” in academia and research institutions
- Highly citable articles boost journal/publisher reputation
- Being “first” to publish breakthrough research
- Authorship – who is an author and who is named an author?
- Data ownership - who owns the data?
- Computer hacking, system manipulation
- Open access vs paid access
How will we know when we have a solution?

• Accommodation for alternative options
• Better communication among stakeholders
  • Dialogue mapping, knowledge mapping
• Improved collaboration among those equipped to handle the problem
• Everyone “owns” the problem
• Flexibility – i.e., changes with changing environments
• Ongoing commitment – problem is not necessarily solved but everyone “remains in the mess” (Horn)
Knowledge Map – from mapitknowit.wordpress.com

- **Apples** can be **Red** or **Yellow** or **Green**
  - **Red** means **Ripe**
  - **Yellow** means **Not Ripe**
  - **Green** but if **Granny Smith** means **Not Ripe**

- **Mushy, Shrivelled** means **Overripe**
- **Ripe** means **Good to Eat**
- **Not Ripe** means **Not Good to Eat**

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Dialogue Map – from CogNexus Institute
Looking toward the future

• Generate a visual map or representation of the solution space
• Generate a shared understanding of the problem space
• Increased ownership of the problem among stakeholders
• Attention to improving communication about the problem
• Increase awareness of infrastructure to solve problems
• Increased attention to perverse incentives that fuel the problem
• More sharing of educational options to early career researchers
• More people working to increase transparency in conducting and publishing research
What do we need to consider in solutions?

• Don’t generate new problems with solutions
• Get buy-in from key stakeholders
• Embrace efforts inclusive of current and future possibilities
• Promote education of all involved
• Collaborate with multiple groups
• Goals need to embrace concept of changing the climate in the conduct of research and publication
Criterion 10: “Planners are liable for the consequences of the actions they generate.” H. Rittel

Via Twitter from @boomerang
References


• Map it – Know it [https://mapitknowit.wordpress.com/](https://mapitknowit.wordpress.com/)
