Future of Science Communication

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Background

- **Academic background:**
  - Communication (US)
  - Psychology (US)
  - Sociology (UK)
- PhD, Sociology

Forthcoming book in Public Communication of Science & Technology (PCST) series:

‘Science Communication: A knowledge base’
Current main roles:

1) Sociology professor, University of Warwick
   - Teaching social research methods
   - Media audiences and social change
   - Founded MSc in Science, Media & Public Policy (no longer live)

2) Senior Research Fellow, ICoRSA (icorsa.org)
   - European Commission-funded projects relating to responsible research and innovation (RRING.eu; GRRIP.eu)
100+ Engagement & Impact-related Publications
Experience

Ireland-specific:
-Space Week
-SFI Science Week 2018
-Probe (Dublin); Cork Discovers (UCC)
-Supporting TCD, SGD, UCC in European Commission-funded evaluation and research projects
-Abbott Fund
-Abbvie Foundation
COST Action on Science Communication

How to address the increasing challenge of science communication in a diverse European landscape?
<table>
<thead>
<tr>
<th>Working Groups</th>
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<tbody>
<tr>
<td>WG 1 on high-quality, interdisciplinary and evidence-based science communication (in line with Objectives 1+2)</td>
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<table>
<thead>
<tr>
<th>Deliverables</th>
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<tbody>
<tr>
<td>- <strong>D1.1 Rapid Evidence Review:</strong> ‘What works to develop impact in science communication?’</td>
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<tr>
<td>- <strong>D1.2 Scoping review on reward and award mechanisms for effective science communication</strong></td>
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<tr>
<td>- <strong>D1.2.1 Reward – Rapid review paper:</strong> How do institutions / research systems reward researchers?</td>
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<tr>
<td>- <strong>D1.2.2 Award – Recommendations paper:</strong> Proposal for an ‘Impact enabler’ award for excellence in science communication support.</td>
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<tr>
<td>- <strong>D1.3 Scoping Review:</strong> Establishing a code of practice for EU science communication. (Involves reviewing existing codes of practices for science communication globally)</td>
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Future of Science Communication
Future of Science Communication is socially responsible
## Future of Science Communication is socially responsible

<table>
<thead>
<tr>
<th>Process dimension of Responsible Research &amp; Innovation</th>
<th>Key questions for science communicators</th>
</tr>
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</table>
| Diverse & inclusive: involve early a wide range of actors and publics in [research] practice, deliberation, and decision-making to yield more useful and higher quality knowledge. | • How diverse are science communication teams and individuals’ personal/professional backgrounds?  
• Is a diversity of different types of perspectives being brought to bear on decision-making about how to implement science communication? |
Future of Science Communication is socially responsible

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| Anticipative & reflective: envision impacts and reflect on the underlying assumptions, values, and purposes to better understand how [science communication] shapes the future. | • How reflective is science communication research about its underpinning assumptions, values, purposes and approaches?  
• Who benefits from science communication? How can wider benefit be enabled from science communication? |
Future of Science Communication is socially responsible

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<td><strong>Open &amp; transparent:</strong> communicate in a balanced, meaningful way the methods, results, conclusions, and implications to enable public scrutiny and dialogue.</td>
<td>• How can any scrutiny or critical dialogue about how we do science communication take place when much of the rationale / decision-making remains private / hidden?</td>
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Future of Science Communication is **responsive & adaptive**

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<th>Process dimension of responsible research &amp; innovation</th>
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<td>Responsive &amp; adaptive to change: be able to modify modes of thought and behaviour, overarching organizational structures, in response to changing circumstances, knowledge, and perspectives. This aligns action with the needs expressed by stakeholders and publics.</td>
</tr>
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</table>

- **Family**
- **Friends**
- **Strangers**
Future of Science Communication is responsive & adaptive

Key questions for science communicators

This dimension directly links to science communication practice, raising the question of how responsive it is to **stakeholder and public needs**.

### The Persona Spectrum

<table>
<thead>
<tr>
<th>Touch</th>
<th>Permanent</th>
<th>Temporary</th>
<th>Situational</th>
</tr>
</thead>
<tbody>
<tr>
<td>One arm</td>
<td></td>
<td>Arm injury</td>
<td>New parent</td>
</tr>
<tr>
<td>See</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blind</td>
<td></td>
<td>Cataract</td>
<td>Distracted driver</td>
</tr>
<tr>
<td>Hear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf</td>
<td></td>
<td>Ear infection</td>
<td>Bartender</td>
</tr>
<tr>
<td>Speak</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-verbal</td>
<td></td>
<td>Laryngitis</td>
<td>Heavy accent</td>
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Future of Science Communication is evidence based
Future of Science Communication is evidence based

Using robust social scientific evidence [...] to ensure success should be viewed as a basic necessity across the sector
There are numerous indicators of professional expertise in science communication, including:

• Applying social science research and theory when designing science communication activities to avoid well-known pitfalls and improve the odds of success.
There are numerous indicators of professional expertise in science communication, including:

- Planning, developing, applying objectives in logical way to address needs of specific stakeholders or audiences.
There are numerous indicators of professional expertise in science communication, including:

- Following good ethical principles including informed consent for participation and responsible data protection and management.
There are numerous indicators of professional expertise in science communication, including:

- Being open and transparent about the nature of the funding, organisations involved and influences on the design of science communication activities.
There are numerous indicators of professional expertise in science communication, including:

- Ensuring that appropriate and relevant communication skills are developed and applied for a given science communication challenge.
There are numerous indicators of professional expertise in science communication, including:

• Being inclusive and welcoming of those who are often marginalised or excluded, both in the development and delivery of science communication activities.
There are numerous indicators of professional expertise in science communication, including:

- Willingness and capability to reflect on limitations in one’s own communication objectives and strategies despite institutional constraints and agendas, even if this may invalidate previously accepted practices.
Committing to continually improve practice based on ongoing collection and analysis of evaluation evidence (Jensen 2014; Jensen 2015a).
There are numerous indicators of professional expertise in science communication, including:

- Working to make any given science communication activity as resource efficient as possible to ensure that opportunities for positive impact are not squandered.
There are numerous indicators of professional expertise in science communication, including:

• Applying well-established principles of good communication should be a basic expectation of science communication practice for professionals and their funders.
Evidence-based science communication must be expected to ‘invalidate previously accepted’ practices and ‘replace them with new ones that are more powerful, more accurate, more efficacious’ (Sackett et al. 1996: 71).
Future of Science Communication is self-reflective
"Would you tell me, please, which way I ought to go from here?" said Alice. "That depends a good deal on where you want to get to," said the Cat.
Reflective Practice

• *Reflective practice* should be a normal part of engagement practice.
Defining Reflective Practice

- Reflective practice – ‘knowing-in-action’
  - Reflection begins with recognition of a challenge and your response. This process of "catching oneself" is essential for highlighting that you have alternative pathways you can choose.
Defining Reflective Practice

Reflective practice – ‘knowing-in-action’

- This self-awareness provides a bridge to critically analysing one’s assumptions and beliefs.
- Developing a reflective process involves asking and answering the fundamental questions of:
  - What do I do?
  - How do I do it?
  - What does this mean for both myself as a professional and those I serve?
Over to you!
(small group discussion)

• Consider and discuss the **assumptions** underpinning the **content** and **delivery methods** selected to address your targeted science communication outcomes.
Discuss how you currently go about achieving intended outcomes you identified

1. Why do you use this approach?
2. What assumptions are you making about your audience?
3. What other assumptions are you making? Are these realistic?
1. Why do you use this approach?
2. What assumptions are you making about your audience?
3. What other assumptions are you making? Are these realistic?
*See Gerber-led breakout session for more on this
Other issues to explore with reflective practice:

- *Delivery of programmes as intended?* (e.g. peer observation or video recording presentations / session management, with peer feedback).

- *Critical reflection on content / framing.*

- *Learning new theory / research and applying to practice*
How might your positioning affect your decision-making?
Future of Science Communication is effective
This is a Do Bee. He’s a cheerful, smiling fellow.

This is a grouchy old Don’t Bee. He’s never very happy.
The unreflective science communicator

Chooses how and what to communicate based on personal preference of the communicator, rather than audience needs.
The unreflective science communicator

Never needs to evaluate because the communicators know in their ‘guts’ that what they do is fantastically effective and brilliant.
Unreflective science communicators

Have no clarity about what they are trying to achieve (‘we do this because we have always done it’)

DON'T BEE

DON'T BE A DON'T-BEE

BE A DO-BEE!
Unreflective science communicators

Choose how and what to communicate based on personal preference of the communicator, rather than audience needs.
The unreflective science communicator
Does not disclose motivations, funders or underpinning rationale

Advocacy versus Evaluation
The good science communicator

Be clear about where you are going

"Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where—" said Alice.

"Then it doesn't matter which way you go," said the Cat.

"—so long as I get somewhere," Alice added as an explanation.

"Oh, you're sure to do that," said the Cat, "if you only walk long enough."
The good science communicator
Clarify how you know when you have arrived at your destination (what does ‘success’ look like?)

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“Oh, you’re sure to do that,” said the Cat, “if you only walk long enough.”
The good science communicator

Can articulate why you are taking particular **steps** to deliver the intended outcomes (based on evidence / theory)
The good science communicator

Seek first to **understand**, then to be **understood**
The good science communicator

Is consistently ethical:
- Avoid deception/misleading
- Gain appropriate consents (e.g. GDPR)
- Provide best available information
- Be inclusive
- Environmentally sustainable
Future of Science Communication

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