# 33. Engaging with Audiences who are Unengaged on Science

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**Abstract.** A key challenge for many science communicators, often overlooked, is how to reach out beyond those audiences who are already engaged with science, and get through to those who are unengaged or disengaged with science. Market segmentation research in Australia and the United Kingdom shows that these unengaged may make up about 35 per cent of the public – a not insignificant group of people. This presents a real challenge for contemporary science communication and engagement activities – how do you ensure that you are reaching and hearing from a full representation of the community?

**Keywords:** Public Engagement, Unengaged, Public attitude research

## Introduction

Activities undertaken by science centers, research institutions, the science media and science communicators over the past few decades have, in general, made a significant contribution to raising awareness of science issues across society and increasing science literacy, at least amongst many people.

For there are still substantial numbers of the population, in all countries, who never visit science centers or research institutions, are turned off by science-based stories in the media, and are unengaged on science topics. But while we, as science communicators, collectively know more and more about the segments of the population that are 'switched on' or engaged with science, we seem to know precious little about those who are 'switched off'. Yet without a better understanding of the attitudes and values of these people, they are unlikely to be effectively reached with most science communication strategies.

Australia's Department of Innovation, Industry, Science and Research has undertaken a series of dialogues with recruited members of the public who are unengaged on science, to discover more about their interests and attitudes, sources of trust and information needs. Key findings are that unengaged members of the public have different values, different interests and are differently engaged about science and technology from those sections of the public who tend to be involved in most science communication activities.

So relying on data from people who engage in science communications activities, and extrapolating that across the broad population can be as misleading as taking the opinions and comments of extremist groups on issues such as gene technology or nanotechnology as representative of the broad society.

Indeed, one lesson from public engagement activities on these topics in Australia is that it is difficult to attract and maintain broad public interest in a debate being conducted between interest groups. This is particularly so when the debate is defined by polarised extremes of those passionately for or passionately against the technology; neither of which align well with the broad public interests in hearing a balanced account of the relevance of different applications to their lives.

And this relevance to one's life is doubly significant when seeking to communicate with the unengaged, as the findings have revealed.

### Better Understanding the Segments

While different countries will have different attitudinal or behavioural segments of the public in relation to how people relate to science and technology, the findings of two recent studies serve well to show the types of audience segments that can exist.

A UK study undertaken in 2008, Public Attitudes to Science 2008 – a Guide, prepared for the Research Councils UK and the Department for Innovation, Universities and Skills, found five key segments [1]. These were:

1. The Confident: 20%

The most interested and most positive about science, most informed about science and most highly educated.

2. The Less Confident: 25%
   Very concerned about change and felt that science and scientific development was out of control. They feel poorly informed about science. Nearly half were over 60, and this segment had the lowest level of education.
3. The Sceptical Enthusiasts: 12%
   Had a positive outlook on life, liked learning new skills and had a wide range of interests. They were also positive about science. However, they were sceptical about authority.
4. The Distrustful: 20%
   Lacked trust in Government and authority. Not very interested in science and worried about certain scientific developments. This segment was on average younger than the general population. A significant number were women.
5. The Indifferent: 20% Had a limited understanding of science and were not concerned about its control. Highest proportion of parents with children under 16, with a small proportion of people educated to degree level or higher.

Based on this audience segmentation study, as much as 40 per cent of the UK public could be categorised as unengaged or disengaged with science. This might of course vary issue to issue, and not preclude them from taking part in some science debates, but they were in general not very interested in science.

In Australia, the Victorian Department of Innovation, Industry, and Regional Development conducted a similar segmentation study, based on attitudes and behaviours in seeking information on science in 2007 and 2010. The report, Community Interest and Engagement with Science and Technology in Victoria, found six key segments [2]. These were:

1. Interested/not active: 23% Interested in science but not active in searching for science information. This was the segment with the oldest average age.
2. Interested/active: 27% The True Believers! Interested in science, active in searching for science information and able to find information they can easily understand. Most work full time, are well educated, early adopters, attend science events and follow science stories in the media.
3. Interested/active/can't find: 16%
   Interested in science, active in searching for science information but unable to find it or have difficulty understanding it. They want more information on science, watch science documentaries, and want science explained in simple terms.
4. Neutral / not searching: 8% Many female, do not want to know more about science, have other interests.
   Neutral towards science and not actively searching for science information.
5. The Indifferent: 20%

   Have a limited understanding of science and are not concerned about its control. This segment had the highest proportion of parents with children under 16 and only a small proportion of people educated to degree level or higher. Predominantly female, do not enjoy science in the media, nor care how things worked. Felt technology was out of control, and had very black and white views of morals.
6. Disinterested/searching: 8%
   Neutral or disinterested towards science but active in searching for science information. The youngest average age, with many sub-groups and 'fringe dwellers'.

By this analysis, about a third of the population surveyed was unengaged in science. This led the National Enabling Technologies Strategies' Public Awareness and Community Engagement program within the Federal Innovation Department to try and find out more about the specific traits of this group. Subsequently the Department held four 'nano-dialogues' in different cities around Australia: Adelaide, Melbourne, Wollongong and Brisbane, on the topics of water, science citizenship, bionics and new materials [3]. The discussions were all framed by topics that

were not primarily about science, even when scientific expert input was available to the groups. The objectives of the nano-dialogues were to explore ways that people not interested or engaged in science and technology might come to talk about it [4]. A market research company recruited eight to 10 people per group, using the segments from the Victorian government's study, without informing participants of the exact topic of the matter to be discussed.

The moderation methodology was one of minimal steering, to allow the groups to chart their own directions. This enabled the participants to lead the discussions more than would happen in a focus group, and allowed them to frame the technologies in terms of their own ways of thinking. The result was that discussions frequently moved towards topics related to the type of world we want to live in.

## Key Findings

The key findings from the nanodialogues so far have been that the values, interests and levels of awareness in science and technology issues among the disengaged and unengaged members of the public are quite different from those sections of the public who tend to self-select to attend most information or engagement activities. In particular, they often have had poor experiences with science at school that has turned them off the subject. This suggests that the school years are the most crucial point for science education or communications intervention. Other findings included:

- Typically, interactions with S&T were not immediately visible, recalled nor valued,
- Many used and valued using a range of technologies, although not all were mobile phone and internet literate,
- They tended to seek information on science and technology issues primarily from friends and family, with little reference to experts,
- They weren't generally interested in knowing the science behind how something worked, rather all they needed to know was that it worked and would solve a problem, and
- They responded to science and technology discussions overwhelmingly in terms of application. This was well demonstrated by an excerpt from one of the groups:

**Moderator:** "Nanotechnology – has anybody heard of that term?"
**Participant 1:** "Sounds like an iPod."
**Participant 2:** "If I was sitting on the train reading that I'd just turn the page because I'd presume it was over my head."
**Moderator:** "How do we not switch you off? Does telling you what it does get your attention better than using that term?"
**Participant 2:** "Don't use that term and I'll be alright"
**Participant 3:** "Tell me how I'd use it in my own home."

Likewise people who expressed no interest in science nor technology were willing to engage in discussions about water recycling, climate change and cars, as long as discussions were framed in terms of uses. This demonstrates that for the unengaged segments of the community, science discussions sometimes need to not be about the science itself, but how it is used and why. Non-science science communications.

Other findings from the groups reinforced values-based science communications principles that:

- When information is complex, most people make decisions based on their values and beliefs,
- People seek affirmation of their attitudes (or beliefs) – no matter how fringe – and will reject any information that is counter to their attitudes (or beliefs),
- Public concerns about science and technologies are almost never about the science – and scientific information therefore does little to influence those concerns, and
- People most trust those whose values mirror their own.

## Conclusions

While this research is only a start, and more work needs to be undertaken to discover how different science and technology issues are viewed (or not viewed) by unengaged members of the public, it is useful to show that the unengaged can be engaged in science discussions if they are not framed as being about science. Of course different countries will undoubtedly have different segments of values, attitudes and behaviours towards science amongst their populations, but it is necessary to find out exactly what they are to understand how many might be unengaged, and

what might best engage them. The findings of this small study indicate that unengaged segments of the population tend to have quite different

attitudes, values and sources of trust on science and technology, and therefore quite different communication, education or engagement strategies will be needed to best reach them.

## References

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2. Community Interest and Engagement with Science and Technology in Victoria, Department of Innovation, Industry, and Regional Development in Australia, 2007 and 2010.
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